Volume 45 ★ Number 11
NOVEMBER, 1938

Clinical Medicine and Surgery

GEORGE B. LAKE, M.D., Editor

Editorial Staff: Dr. W. A. Newman Dorland Dr. J. E. G. Waddington
Dr. Henry Schmitz Dr. H. J. Achard Dr. Ralph L. Gorrell
Dr. Frank T. Woodbury Dr. M. J. Hubeny

★ Editorial ★

Nikolai Pirogoff

The Russian John Hunter

UP TO the time of the World War, Russia had most of the characteristics of a great and civilized nation, and fifty years ago could hold her own with most of the others. During the Nineteenth Century she produced some of the world's outstanding medical men, in the front rank of whom stood Nikolai Ivanovich Pirogoff (or Pirogov), her greatest surgeon and one of the greatest military surgeons of all times —a fit comrade for Ambroise Paré.

Born in 1810, one of a family of thirteen children, young Nikolai studied diligently, and before he was twelve years old he had made up his mind to study medicine. At thirteen, he passed the entrance examination for the Moscow University, giving his age as sixteen, in order to gain admission. At the age of eighteen he began to study topographic anatomy "on his own," as such a subject was unkown in the Russian, and even in the German schools, and began practicing operations on cadavers.

In 1832 he received his degree, and immediately began graduate studies in Berlin and Göttingen, where he was disgusted with the small attention paid to anatomy, and considered von Langenbeck the only surgeon worthy of admiration.

After two years he returned to Russia, where he taught at Dorpat (adding to his fame by writing "Surgical Anatomy of the Arteries and Fasciae") until 1840, when he became professor of surgery in the Petersburg Military Medical Academy, in which capacity he served for 35 years.

Realizing that a good surgeon is not necessarily a good teacher, he set about fitting himself for his pedagogic duties and introduced many important innovations into the curriculum, among which were the demonstration of experimental lesions in dogs and cats and the teaching of applied topographic anatomy for the first time in Russia. He was also extremely frank in discussing his mistakes in the clinic, for the benefit of his students, so that he became the life and soul of the Academy.

He found the clinical ward in a disastrous condition, almost beyond belief in these

days, with meager surgical facilities and a shocking number of cases of gangrene, erysipelas, and pyemia, crowded into poorly ventilated and dirty quarters. These conditions he attacked with characteristic energy and intelligence, and soon had the infected cases removed to a separate wooden building, and things in general cleaned up. His reward was having the medical director of the hospital accuse him of being crazy.

During this period he performed 11,000 autopsies, among them 800 on cholera victims, and wrote his four greatest books: "Topographic Anatomy" (1851), with a magnificent atlas of 220 plates, in which frozen sections in three planes were first used on a large scale in anatomic illustration; "The Pathologic Anatomy of Cholera"; "Plastic Surgery of the Foot"; and a "Treatise on Military Surgery" (1864). His name is perpetuated in medical nomenclature in connection with his operation of complete osteoplastic amputation of the foot.

Pirogoff and Syme, of Edinburgh, were the first European surgeons to use ether for anesthesia, and the great Russian was the first to employ it on the battlefield. In the Caucasian War, Pirogoff gave chloroform in 300 operations and ether in 400.

In the Crimean War, Pirogoff was horrified at the callousness of the official commissions for the care of the sick and wounded, in permitting and defending the unspeakable conditions which existed. Wounded men with severe amputations were permitted to lie huddled together in the cold and rain, or were carelessly packed into dirty railroad stations or floorless shanties. In the midst of the campaign, with the assistance of the Grand Duchess Helena Petrovna, he organized the "Women's Community of Sisters for Helping the Wounded and Sick," which later became the Russian Red Cross and served with great distinction in the Franco-Prussian and Russo-Turkish wars. These, with Florence Nightingale's 38 British nurses, who appeared at about the same time in the Crimean War, were the first women who ever officially ministered to the wounded on the battlefield.

From the frightful experiences of the war (which he characterized as a "traumatic epidemic," on account of the prevalence of sepsis), and his own enormous labors in caring for the suffering and fighting official inertia and pigheadedness, Pirogoff returned a broken and disappointed man; resigned his professorship in the Academy; and entered private practice in the village of Vishne, where he established a 30-bed hospital, to which came hundreds of patients to seek the advice of the "Great Surgeon."

In 1870, the Red Cross invited him to inspect the sanitary conditions in the battle zone of the Franco-Prussian War, and in 1877 to the Russo-Turkish Campaign. At his fiftieth jubilee, in May, 1881, the Pirogoff Congresses were established, but the master surgeon and teacher who was thus honored lay dying of cancer.

As an operator, Pirogoff's skill, speed, and strength of hand have never been excelled. As a student and teacher, he was original and indefatigable, and boldly challenged the constituted authorities when his experience proved them to be wrong, thus amply meriting the title of "the Russian John Hunter." He *almost* discovered the principle of antisepsis. He shaved his patients before operation, used dry sutures, excised infected parts, kept his fingers and sounds out of wounds as much as possible, and employed antiseptics such as iodine, alcohol, and silver nitrate.

It is not extravagant to apply to this towering Russian physician and patriot with a Western outlook, the tribute paid to his native land by Henry James: "His large nature was filled with the love of justice, but he was also of the stuff of which glories are made."

"No man dies a natural death."—Sir W. Arbuthnot Lane.

Turkey and Things

Someone has, facetiously but not so foolishly, remarked that the turkey has more claim to be adopted as a national emblem than has the eagle. The latter fowl lives, it is true, a bold and free existence, symbolizing the liberty we are supposed to enjoy, but which is more and more menaced by the activities of professional uplifters-for-profit and subversionists. But who ever ate an eagle?

The turkey, on the other hand, which lives, in its wild state, about as untrammeled and adventurous a life as that enjoyed by the eagle, represented, to the founders of our Nation, as near an approach to gastronomic luxury as their hard and stimulating environment furnished. Gar-

nished with cranberry sauce and flanked by a battalion of pumpkin pies, this noble bird made a feast which might have been envied by Lucullus.

So, when their meager and hard-earned crops were harvested and wood was piled high against the sheltered ends of their cabins, to guard them from the rigors of winter, they met, solemnly, in their crude churches, and gave thanks to the Providence which had vouchsafed them life, health, strength, and a measure of success in their arduous fight with the primitive wilderness, harboring wild beasts and wilder men. And then they gorged themselves with the homely but ample fare which the times provided, the turkey being the *piece de resistance*.

Our tame turkeys, bought out of cold storage, may not be so flavorous and succulent as those our ancestors shot, on the wing, with their muzzle-loading fowling pieces, but our thanksgivings, for the many comforts and opportunities which this fourth decade of the twentieth century gives us, in spite of the clamor and uncertainty which are shaking the world, still should be no less heartfelt and sincere than were theirs; nor should our festival be less joyous and satisfying.

The man who sees no cause for thanksgiving, even in stressful times like these, is physically and spiritually blind. With the memory of summer's joys just behind us; and with the prospect of a season of productive effort and growth just ahead, he must be dead, indeed, who finds no gratitude in his heart to the Power—whatever he may choose to call It—which makes all worthy things possible, to him who will learn Nature's laws and govern his life in accordance with them.

Let us, then, give thanks, in the stillness of our hearts and in the company of our friends and neighbors, for turkey and sweet potatoes; for bathrooms and steam heat; for motor cars and radio receivers; for golf and fishing; for books and concerts and theaters; for kindly friends and "good talk"; for the freedom to think as we please and go where we please, which we still possess but must guard vigilantly, lest we lose it; for scores of other blessings; and, above all, for a worthy work to do in the world and the strength and vision to do it.

Every time a man laughs, he takes a kink out of the chain of life.—JOSH BILLINGS.

Can We Believe Our Eyes?

THE EYE IS, of course, the essential organ of vision, but other organs enter into the complex mechanism of what we perceive as sight, to such an extent that the answer to the question asked in the title is not so easy as it seems.

As a matter of fact, *we never really see anything*. What we actually see is a tiny, inverted image (which we must constantly be correcting by a subconscious mental process) of the thing at which we are looking, impressed upon the retina according to the laws of optics. Even then, before we experience the sensation of sight, this retinal impression must travel over various nerve paths before it reaches the sight-center in the cerebral cortex; and about what may happen to it on its travels we know very, very little.

A normal man, looking at a tree, will tell you it is green. A color-blind man, looking at the same tree, will say it is red. There is no anatomic difference in the two eyes, but something has happened to the *message* while it was in process of being delivered to the brain.

We all know that the irritation of the trunk of any sensory nerve will be interpreted as pain, or other sensation, in the normal peripheral distribution of that nerve. We also know that the shock to the nerve fibers, occasioned by a blow upon the head, is frequently *visualized* as points of light—the man "sees stars."

Sometimes we meet a stranger on the street whose gait or carriage is reminiscent of some friend or acquaintance. Very frequently this suggestion will call up a vivid image of the friend, which is projected out in front by our consciousness, and then looked at objectively, so that we really seem to see the absent friend. The stranger's resemblance to the friend need not be particularly striking in order to produce this effect.

It is now well understood by oculists that persons who have an uncorrected error of refraction, particularly astigmatism, see the world distorted, and not as it appears to those with normal eyes.

We can do a good deal to correct physical errors of vision, *when we know that they exist*, and, under the same circumstances, we can check and regulate the psychic factors which enter into our visual perception of the world around us, but we cannot do this

unless we *recognize that there are such factors.*

The practical applications of all this are, that we should not be too serenely confident of the reality of all that we think we see, considering that so many emotional, mechanical, and other factors of possible error may enter into the impression; and that, when we are engaged in making scientific observations, we should be especially careful that our mental attitude is one of clear, dry, and impartial professional neutrality, untinged by our own desires and emotions; for, otherwise, we may see what we expect, or desire to see, instead of what is actually present.

NEXT MONTH

Dr. M. O. Robertson, of Bedford, Ind., will present the full details of vaginal hysterectomy by the remarkable clamp method of Dr. James W. Kennedy, with many illustrations — a highly practical and valuable article.

Dr. T. F. Reuther, of Chicago, Ill., will outline the treatment of chronic functional constipation.

Dr. Ralph L. Gorrell, of Clarion, Iowa, will continue his series on modern methods in general practice with a discussion of sore throats in general practice.

COMING SOON

"Crime and the Pancreas," by D. C. Ragland, M.D., Los Angeles, Calif.

"Instructions to Patients Regarding a Change in Glasses," by Chester C. Lockwood, M.D., Chicago, Ill.

Specialized Eugenics

THE EUGENISTS HAVE LONG BEEN contending (and with plenty of reason) that we should use as much care and sense in breeding children as we do in the breeding of cattle, horses, and dogs,

Now, according to the *Chicago Tribune* for October 9, 1938, Dr. Maud Slye, the famous demonstrator of the hereditary nature of susceptibility to cancer, advocates a specialized form of eugenics for breeding out that disease. This, to be effective, would require the routine performance of autopsies on all human bodies, and recording of the results. She suggests the establishment of a cancer pedigree bureau, where family histories in regard to this disease can be kept on file, so that when a young man, whose family tree has borne no cancerous fruit, wants to take a wife, he can look up the records of the eligible candidates and be sure that he is not making things tough for his offspring.

The idea is splendid; and maybe the rising generation will prove to be sufficiently sane and courageous to do something about it. Most members of the present generation shudder at the mention of an autopsy, and will scarcely even speak of breeding above a whisper, much less stop long enough to do a bit of thinking when they want to get married.

This looks like another of the fine and civilized jobs that will await the people of the 21st Century, who will, one hopes, do more thinking and a bit less emoting than their great-great-grandfathers (and grandmothers) are now doing. Things like this are bound to happen whenever any considerable portion of the genus *Homo* actually becomes species *sapiens.*

NOVEMBER

Last leaves fall
And the summer birds
Have followed the southing sun.
Then, before snow, earth sings for a day,
When the year is all but done,
A song without words;
A last call.

G. B. L.

★ Leading Articles ★

The Conservative Treatment of the Maxillary Antrum

By

F. A. Wier, M.D., Racine, Wis.

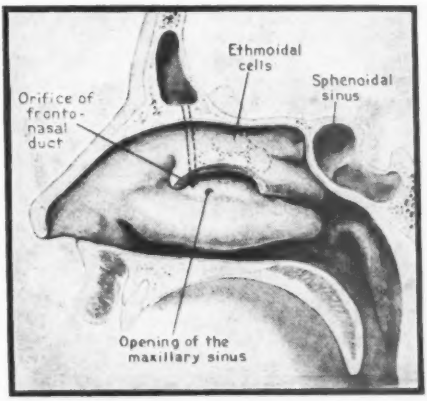
THE *hiatus semilunaris* is important for the reason that it is a drainage canal and receives secretions, through their ostiums, from the frontal, anterior ethmoidal, and maxillary sinuses.

The middle turbinate is important because any hypertrophy or malformation may interfere with the proper drainage of the sinuses and be the cause of disease of these structures. Even in normal persons, the anterior third of the middle turbinate covers the hiatus and the ostiums of these sinuses (see Fig. 1). In all cases of acute or chronic infection of the sinuses the middle turbinate should be carefully examined, to determine if pressure by the turbinate over the ostiums of the sinuses is the cause of the trouble, or an accessory to it.

Anatomy

According to Hajek,[1] the maxillary antrum is the largest of all the paranasal sinuses (see Fig. 2). It is bounded medially by the nasal cavity; above by the orbit; and below by the alveolar process of the superior maxilla. The anterior wall forms the canine fossa; the posterior is bounded by the pterygomaxillary fossa; and only the upper posterior angle is bounded by or borders on the cranial cavity.

The maxillary antrum presents the form of a three-cornered pyramid. If one considers the nasal wall as the base of this pyramid, its apex lies in the zygomatic process. The orbital plate of the superior maxilla forms one surface, the facial wall the second, and the posterior surface of the superior maxilla, corresponding to the *tuberositas maxillaris*, forms the third surface of this pyramid. The angles which the individual surfaces form with one another are sharp, and only at the junction of the anterior facial with the inner nasal wall is a shallow cavity formed which, as the floor of the antrum, on account of the relation of the antrum to the alveolus of the superior maxilla, possesses especial importance.



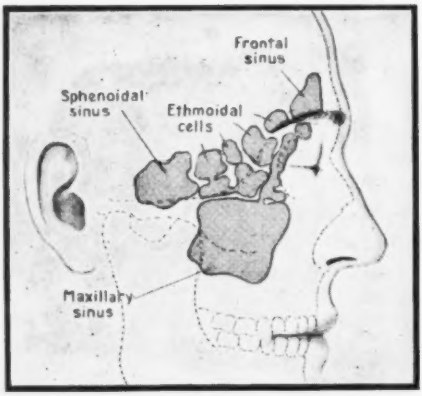
Courtesy of E. Fougera & Co., Inc.

Fig. 1.—Showing the importance of the middle turbinate in sinus disorders. Part of the middle turbinate has been cut away to show the openings of the frontal and maxillary sinuses.

The nasal wall, most important of the walls of the maxillary antrum, is the medial, bordering on the nasal cavity. A knowledge of the thickness of this membranous wall is important. It is thinnest in the middle meatus, but this is not the spot selected for antrum puncture, on account of the danger of puncturing the orbit. The inferior meatus, although thicker and of a more bony consistency, is selected as the safe spot to make the puncture or an intra-nasal window operation.

The *ostium maxillare* is in the middle meatus, in the posterior part of the infundibulum, which is a funnel-shaped drainage canal that communicates with the nasal fossa. The *ostium maxillare* is located immediately below the orbital floor, at the highest point of the antrum. This is one of

1.—Hajek, M.: "Pathology and Treatment of the Inflammatory Diseases of the Nasal Accessory Sinuses." The C. V. Mosby Co., St. Louis, Fifth Edition (1926), Vol. 1, page 18.



Courtesy of E. Fougera & Co., Inc.
Fig. 2.—Diagrammatic projection of the paranasal sinuses, showing their relative sizes and positions.

nature's mistakes, as the secretion must completely fill the antrum before it discharges into the nasal cavity. Occasionally there are one or more accessory ostia lower down, that will drain before the antrum is full, showing nature's attempt to remedy a serious blunder.

Another mistake was placing the frontonasal ostium a few millimeters above and anterior to the maxillary ostium, so that, under certain circumstances, the secretions from a frontal sinusitis may drain into the antrum and cause a secondary infection. The form and size of the *ostium maxillare* varies, but it usually forms an elliptical cleft, with its long axis directed sagittally. The size varies from an opening 3 millimeters in diameter to one 19 millimeters in length and 6 millimeters in width.

The inferior wall of the maxillary antrum is next in practical importance to the nasal wall, because of the relations of the alveolus to the antrum. Diseases of the roots of the teeth and the accompanying processes of the alveolus may extend to the antrum. The size and thickness of the floor of the antrum are very important. Sometimes the apices of the roots of the teeth project through a thin antral floor in the form of alveolar prongs. This explains why persons with good teeth acquire an affection of the antrum through a relatively insignificant periostitis of the root of a tooth, while on the other hand, persons with a thick alveolar process, with several carious roots, go through many attacks of periostitis and never suffer from an affection of the antrum.

In the majority of cases the maxillary antrum, in its sagittal plane, reaches from the first bicuspid to the third molar; in a small antrum, however, the bicuspid may lie anterior to the antrum. On the other hand, with a large cavity the canine may lie in the region of the antrum. Usually the second bicuspid and the first molar represent the deepest part of the antrum, and it is well known that these latter teeth may give rise to extensive inflammation of the antrum, because perforation through the alveoli of the first molar and second bicuspid meets with least resistance.

Maxillary Sinusitis

Skillern [2] says that the antrum is more often diseased than its fellow sinuses, because it has an additional etiologic factor in the intimate relation of its floor to the roots of the teeth.

Sinuses are usually infected through their ostia; occasionally through the circulatory system. The maxillary sinus not only presents this condition to a marked degree (80 percent), on account of the extremely unfavorable situation of its ostium, but, in addition, certain affections of the alveolus are prone to affect this cavity (20 percent).

Direct extension of an acute coryza from the nasal mucosa is bound to cause more or less inflammation of the maxillary sinus, which usually clears up when general resolution sets in. But, in repeated attacks of coryza, the sinus mucosa reaches a stage where it is no longer able to regenerate itself, and in this way the disease may become chronic. A large percentage of antrum infections follows every influenza epidemic. Probably the majority of antrum affections are secondary to a frontal sinusitis, the pus draining into the maxillary through its ostium.

Symptoms

In acute sinusitis there is a feeling of distention and pressure, due more to swelling and hyperemia of the maxillary mucosa than to internal pressure of the pent up secretions, the nasal passage being closed by swelling of the middle and lower turbinates.

The pain in these cases is neuralgic. In acute empyema of dental origin, with periostitis of the alveolus, the pain is severe. The pain may be supra-orbital and so persistent as to lead to a diagnosis of frontal sinusitis, and possibly a needless operation, if a roentgenogram has not been made. Pain in the teeth of the upper jaw on the diseased side may be present, if the empyema is of dental origin. Pus may appear in the middle nasal passage over the uncinate process beneath the middle turbinate, and in cases of dental origin it will be fetid.

Sometimes, by having the patient lie on his stomach over a bed or table, with the

2.—Skillern, Ross Hall: "The Catarrhal and Suppurative Diseases of the Accessory Sinuses of the Nose." J. B. Lippincott, Philadelphia, Third Edition (1920), page 122.

head resting on the floor, and blowing the nose, there will be a sudden escape of pus, with temporary relief of the symptoms.

In the chronic form the symptoms are unreliable. The sinus may be filled with dilated cysts, mucous polyps, and inspissated pus, without causing any distress to the patient, except a headache of some kind, usually supra-orbital neuralgia. Trigeminal neuralgia is frequently caused by a diseased antrum, although this is seldom suspected.

Symptoms affecting the nasopharynx and larynx are common in antrum affections, and may be the only symptoms for which the patient seeks relief, being unaware that he has any antrum trouble. These symptoms are dryness in the morning, with hawking and clearing the throat of large masses of half-dried secretion which has accumulated during the night. The constant hawking and forcible removal of these secretions cause a granular pharyngitis and laryngeal disturbances, such as hoarseness, partial aphonia, and even complete loss of voice. The diagnosis should not be made by the symptoms alone, but rather by roentgenograms and transillumination.

Differential Diagnosis

There are two conditions for which one should always be on the look out. These are dental cysts and the breaking down and ulceration of a sarcoma. Sarcomas, on account of their poor blood supply, can break down and ulcerate, thus producing a purulent process within the antrum. The discharge is mixed with blood and broken-down portions of the tumor and has an intense fetid odor. A physician who has once experienced it can thereafter make the diagnosis by the odor alone. The maxillary sinus is the seat of malignant disease more often than all the remaining sinuses together.

Bronchiectasis not due to foreign bodies, is now considered to be caused by sinusitis. Other focal infections are diseases of the eyes, gallbladder, kidneys, nervous system, the long train of symptoms masquerading under the name of rheumatism, ascending osteitis, edema of the eyelids, exophthalmos, temporary blindness, and, in rare cases, meningitis and brain abscess.

It is absolutely necessary to have some practical knowledge of the anatomy of the antrum in order to evaluate the applied pathology, in the etiology, symptoms, diagnosis, and prognosis of diseases of the antrum.

Acute Antritis

After one has applied every other known method of diagnosis in acute antritis, rhinoscopic examination, before and after shrinking the middle turbinate with cocaine and epinephrin, generally shows polypi, a large, boggy middle turbinate, or the septum deflected to the lateral wall, pressing the turbinate tightly over the ostium.

If, after transillumination and a roentgenogram of all the sinuses on both sides, for comparison, the suspected antrum appears cloudy, naturally the first thing to do is to correct the nasal pathosis, before one can hope to obtain drainage and alleviation of the antral infection. In many cases however, the trouble is caused solely by an enlarged or malformed middle turbinate, pressing over the ostium and obstructing drainage from the antrum. This condition is easily and quickly relieved by refracting the middle turbinate away from the lateral wall.

Refraction of the Turbinate

Take a cotton-tipped applicator, moistened with 1:1,000 epinephrin solution and squeezed nearly dry; rub it in some cocaine flakes on a watch crystal; paint over the superior attachment and the whole surface of the middle turbinate three times, at intervals of five minutes, after which the turbinate can be fractured without a twinge of pain.

Force a small, blunt submucous elevator between the turbinate and the lateral wall, forcing the turbinate towards the septum until you hear and feel the bone crack; then, with forceps, grasp the turbinate and forcibly fracture it right and left, until it hangs loose in the canal. Suck the pus out of the antrum with a Nichols nasal syphon; press the turbinate firmly against the septum with a retractor; then, with forceps, force a strip of Good's intranasal tampon, 30 mm. long and 5 mm. wide, between the superior attachment of the turbinate and the lateral wall; moisten the tampon with a drop of water and it will swell up to 8 or 10 mm. and hold the turbinate well away from the lateral wall, providing free drainage from the antrum. This pack need not be removed for three days.

Irrigation and suction can be carried out every day with a boric acid solution in a Nichols nasal syphon, the stream being directed into the opposite nostril. Should the pack be washed out, the turbinate should be cocainized and a new pack inserted. After the third day the swelling will subside and then a new pack should be inserted every day for seven days. After this time the turbinate will be permanently anchored in its new position, well away from the lateral wall. The suction should be discontinued as soon as there is no more pus appearing in the water, or in the middle meatus. This simple operation and treatment will cure 90

percent of acute antrum infections. I do not approve of needle puncture and irrigation of the antrum. If the ostium is closed, it will do no good; and if the ostium is open it is unnecessary, as the antrum will then drain itself. Furthermore, in unskilled hands, it is dangerous, because the orbit may be punctured. Even in skilled hands, the frequent puncture through the mucous membrane and periosteum may set up periostitis.

The prognosis in chronic antritis is good, and the treatment has been greatly simplified since the advent of the electro-antroscope. With this instrument one can inspect all parts of the antrum and see what particular condition is present. After the diagnosis has been made as described under acute antritis, and any existing nasal pathosis removed, the first step is to make *just one* needle puncture, as a final diagnostic aid and, if pus is washed out, be prepared to operate at once by the intranasal window method, under the lower turbinate.

The Window Operation

First, cocainize the whole lateral wall of the nostril, especially over and under the lower turbinate. According to the technic in acute antritis, paint over the surface three times, at five-minute intervals. In this way only a small amount of cocaine is used and the operation can be done painlessly.

With serrated turbinate scissors, cut the superior attachment of the lower turbinate back for one inch, and with forceps, fracture the remaining portion and turn it up against the septum; then, with a diamond-shaped, back-cutting trocar, directed upward and outward toward the eye and as far back as the cut in the turbinate, gently penetrate the antral wall. Here the wall is very thin and it will be found easy to enter. With a backward and rotary motion, ream out a hole large enough to admit the back-cutting antrum punch, and with it make a round hole large enough to admit the electro-antroscope, with which instrument one can see the whole interior of the antrum and make note of the pathologic conditions.

If polyps are present, grasp them with a Knight forceps and, with a slight twist, pull them out; then, with a Pratt angular curette, go over the spot immediately while it is in view. Next sweep the curette around, to remove inspissated pus, wash out the antrum with sterile physiologic saline solution, and inspect carefully for any other pathologic conditions. Examine the floor for evidence of alveolar infection; also the posterior, inferior, and antro-superior angles for polypoid degeneration of the mucosa, areas of granulation tissue, and necrotic spaces and, if found, remove them with the curette, but do not curette any more than is really necessary. Give nature a chance, remembering that the destroyed mucosa is replaced by fibrous connective tissue, which is undesirable in an antrum.

It is now considered poor surgery to curette out the whole mucous membrane of the antrum for one polyp, as is done in the radical Caldwell-Luc operation. Fortunately the electro-antroscope has made this operation passé. If teeth are to be extracted, especially the second bicuspid, instruct the dentist to drill right through into the antrum, and have him prepare an obturator to fit this opening, to keep it open as long as drainage and irrigation are necessary. After the operation replace the turbinate. Packing is seldom necessary.

It is claimed that the antrum causes infection of the frontal sinus, but I do not believe that germs find their way into the frontal, with its straight-down drainage canal, of their own accord, but are forced in by improper nose blowing—holding one nostril shut with a finger and then blowing. If the opposite nostril is closed by a cold or other obstruction, the air back fires into the frontal and the ear, carrying germs with it. Children should be taught to blow both nostrils at once into a loosely-held handkerchief. If this were done there would be fewer cases of ear ache or frontal sinus trouble.

After-Treatment

The after-treatment consists of irrigations of the antrum through the round window, with sterile physiologic salt solution, for a few days, until the washings come clear—free from pus, blood, and other debris. Then use the dry method, which consists of blowing iodine powder into the cavity with De Vilbiss powder blower No. 37, until the floor and walls are covered. This is continued until all discharge has ceased. No packing is used, as it becomes soggy and really prevents free drainage.

This method requires from two to four weeks for complete healing, while after the Caldwell-Luc operation it may require months. Another advantage is that the cavity may be inspected every few days, to watch the healing process. The operation itself is simple. Any physician with a little surgical ability, who will take the trouble to learn the anatomy and the technic of using a nasal speculum and a head mirror, should have no difficulty in performing it.

Case History

Joseph K., policeman, age 31 years, had had trouble with his nose since childhood. He consulted a physician in 1927, who *cut off*

several polyps, instead of pulling them out by the roots. When he consulted me, in 1931, examination showed a large, mushy, necrotic middle turbinate in each nostril, along with several polyps, all of which were removed, including the ethmoid cells. His upper teeth were all bad, and were subsequently extracted, and he had no further trouble until May, 1938.

The patient again consulted me May 18, 1938, and said that for the past week he had felt some discomfort in the right side of his nose and cheek, and that suddenly, after a sneezing spell, the right nostril became completely blocked, so that he could neither breathe nor blow through it.

Rhinoscopic examination showed a large polyp just inside the nares. This was grasped by a snare wire and carefully and completely pulled out. It measured four inches in length. When the pedicle attachment separated from the mucous membrane, the patient experienced a sharp pain in the antrum and there was a gush of at least a tablespoonful of bloody serum out of the nose. The patient stated that, for several days past, the same type of secretion had been oozing from his nose and down his throat.

This case proves that this large polyp, had, no doubt, been growing in the antrum for years, until it became so large that it was literally pushed out through an unusually large ostium; and it proves what has been said before, that polyps can lie dormant for years without causing the patient any trouble. A roentgenogram will be made, a little later, of all the sinuses and further treatment instituted if indicated. Unfortunately a roentgenogram was not made in 1931. This case shows why one should always be taken in these cases.

313 6th St.

The Oral Use of Whole Adrenal Gland in Coughs

By

ORVILLE E. BARBOUR, B.S., M.D., F.A.C.P., F.A.A.P., Peoria, Ill.

DURING the past eight years I have been studying the therapeutic effects of whole adrenal gland given by mouth in certain disorders of the respiratory tract in which a disturbing cough was a prominent symptom. My reasons for attempting this study were given in a preliminary report.[1] In this article I am reporting my clinical observations on the group of cases, covering an eight-year period.

Material Used and Doses

Throughout this study, desiccated whole adrenal gland, in the form of uncoated compressed tablets, was used. The products of several pharmaceutical firms were used. *If they were administered when sufficiently fresh*, the preparations of four firms* seemed to be satisfactorily potent. It is extremely important for the successful use of suprarenal gland therapy, as it is with any endocrine treatment, to make as certain as possible that the material prescribed is fresh.

In acute disorders, better results appeared to follow the administration of the adrenal substance at two- or three-hour intervals. Like those of epinephrin, its immediate actions seemed to be of relatively short duration. In more chronic conditions, better results appeared to occur if the suprarenal material was given with meals. The better minimal dose for infants seemed to be 0.03 Gm. (½ gr.). The optimal dose for infants appeared to be 0.06 Gm. (1 gr.) The better doses for children apparently are 0.06 Gm. (1 gr.) to 0.12 Gm. (2 gr.).

In certain cases, when the adrenal gland failed to relieve the patient's cough, or after a period of time may have lost its therapeutic effectiveness, the addition of a certain amount of iodine or thyroid gland to the suprarenal gland medication frequently brought about the desired therapeutic results.

Clinical Results

Some 1,700 clinical cases are included in this study. The patients were infants and children of various ages.

The whole adrenal gland relieved the coughs of from 70 to 90 percent of certain respiratory disorders, in 1,700 clinical cases. It seemed to be as effective in most cases as did codeine. In fact, in several cases, the glandular substance promptly relieved coughs on which codeine had had no effect. In many cases, with the use of the suprarenal gland, the condition of the patients

*Parke Davis & Co., Eli Lilly & Co., Armour & Co., and Wilson & Co.

TABLE I

Disorders	No. Cases	Percent Good Results
Acute rhinopharyngitis	700	80
Acute bronchitis	350	80
Chronic rhinopharyngitis	160	80
Chronic bronchitis	80	90
Whooping cough	300	70
Measles	120	70

appeared to improve more rapidly than did that of those which were treated with alkaloids and inorganic drugs.

With the exception of those with measles, all of the cases in this study were relatively afebrile. That the adrenal gland therapy with measles is not entirely irrational is indicated by Macciota's report[2] on the changes found in the suprarenal glands in measles. In whooping cough cases the adrenal material gave more palliative relief in a greater percentage of cases than did any other remedy. It seemed particularly effective in intractable cases where other measures had failed.

Other Treatments

For the purpose of comparing their actions and as partial controls, certain other drugs were used, alternately or concomitantly, through the course of this study.

Synergists: I found that the actions of certain drugs simulated, to a certain extent, the therapeutic actions of the adrenal gland. These drugs included calcium, phenobarbital, codeine, ephedrine, neosynephrin, and epinephrin.

Adjuvants: Certain other drugs appeared to inhibit the untoward reactions to the suprarenal gland and, at the same time, to enhance its therapeutic effectiveness. These drugs were atropine, iodine, and thyroid, any one of which, when given with the adrenal substance, seemed to act much as iodine and calcium do when they are given together as calcium iodide.

Untoward Reactions

Abdominal Pain: In certain individuals, particularly constipated ones, suprarenal gland may produce abdominal pain much like that which may follow the oral application of the stronger solution (1/100) of epinephrin. This reaction may be avoided or relieved by the use of smaller doses, or with the concomitant administration of atropine, iodine, or thyroid gland.

Vomiting: Certain patients (particularly infants), especially constipated ones, may at times react to the adrenal gland medication with vomiting. This untoward reaction may be avoided by using the same precautions as are given for the abdominal pain.

Constipation: The whole suprarenal gland may produce constipation, or aggravate a preexisting one, in certain individuals. Atropine, iodine, or thyroid gland may inhibit this effect upon the bowel function.

Comment

The observations of this study would seem to indicate an antagonistic action of the adrenal gland material upon the parasympathetic system. An effort was made to obtain blood-dextrose and blood-calcium evidence of clinical vagotonia in this group of cases, but the results were not conclusive.

Although my observations have convinced me of the therapeutic effectiveness of whole adrenal gland, given by mouth in certain respiratory disorders with disturbing coughs, the manner of its actions is another matter. The general effect is probably an antivagotonic or a sympathicotonic one. Many of the cases of this group might very likely have been associated with a relative vagotonia. The vagotonia may imply a relative hypoadrenalism. On the other hand, as Gordon[3] has said about the use of cortical extracts, even when the adrenals may not be primarily to blame for the disability, there may be a real benefit from the use of the adrenal substance. "This would be analogous to the fact that thyroid medication may raise the metabolism rate and give clinical improvement in conditions where there is no primary disturbance of thyroid function."

Whether the therapeutic results of the whole suprarenal gland are due to its epinephrin content, to cortin, or to still another factor, is a question which can hardly be answered at this writing. Vomiting, for example, has been reported to have been relieved by the oral administration of epinephrin,[4] of cortical extracts,[5] and of the whole gland.[6] Hoskins[7] has obtained equivalent pressor effects from extracts of the cortex, and of the whole gland, given by mouth. He believes that the pressor reaction may be due to some other factor than cortin or epinephrin. The same may be true of other clinical reactions to the gland.

Case Reports

Acute rhinopharyngitis: R. C., male, aged 3 years, seen May 23, 1931, had had a "cold" and a severe cough for two weeks. No response to "cough syrups." The cough abated promptly and stopped completely within three days after giving the whole suprarenal gland (2 gr.) at three-hour intervals.

Acute bronchitis: P. M., female, aged 1 year, seen October 22, 1932, had had a

"croupy" cough for several days, with moist bronchial rales. No response to sedatives. I prescribed whole adrenal gland (1 gr.) every two hours. She was cured in two days.

Chronic rhinopharyngitis: H. A., female, aged 7 years, seen December 21, 1934, complained of a severe "cold" and cough of two months' duration. Cough syrups and codeine had had no effect. The chest examination was negative. Whole suprarenal gland (2 gr.) every three hours was prescribed. Five days later the cough was much improved, but the nasopharynx was still considerably inflamed and excreting a profuse, mucopurulent discharge. The child was malnourished and had a very poor appetite. Desiccated thyroid gland (¼ gr.) and whole adrenal gland (½ gr.) before each meal were prescribed. One week later the patient's condition was much improved, there was no more coughing; the appetite had improved. In two more weeks her condition had markedly improved. She had a good appetite and had gained four pounds in weight.

Chronic bronchitis: R. H., male, aged 6 years, seen July 24, 1937, had had a paroxysmal cough of increasing frequency and severity during the past two months. He had had several kinds of cough medicine, including codeine and calcium iodide, with little or no relief. Physical and roentgenray examinations revealed an extensive, non-tuberculous hilus gland and bronchial infection. Whole suprarenal gland (2 gr.) four times daily was prescribed. The patient's condition began to improve at once. The cough abated and disappeared entirely within two weeks.

Whooping cough: (Personal communication from Dr. L. S. Goin, Los Angeles, Cal., October 13, 1933). "I have you to thank for sparing my five-year-old boy much of the tortures of whooping cough. A pediatrician here called my attention to your article regarding suprarenal extract in whooping cough, at a time when the paroxysms of coughing were beginning to be very severe. His appetite had failed completely, and on the night before I commenced the suprarenal extract he had ten violent paroxysms of coughing, followed by vomiting. Within 24 hours after commencing the suprarenal extract the child's appetite returned full blast, and within 48 hours the paroxysms of whooping cough were over. This, of course, was too dramatic to have been a coincidence."

Measles: E. P., male, aged 9 years, seen February 15, 1938. A paroxysmal severe cough the past 5 days. A codeine mixture gave no relief. A measles rash and a fever on that day. Whole adrenal gland (2 gr.) at three-hour intervals was prescribed. Within a few hours he was coughing only occasionally and mildly. Within three days the cough had stopped completely.

Summary

1.—Whole adrenal gland, given by mouth, has been used in the treatment of 1700 cases of respiratory disorders associated with a disturbing cough, during a period of eight years, with a clinical improvement in from 70 to 90 percent of the cases.

2.—The group of cases included acute rhinopharyngitis, acute bronchitis, chronic rhinopharyngitis, chronic bronchitis, whooping cough, and measles.

3.—Certain untoward reactions (abdominal pain, vomiting, and constipation) occurred in a few cases.

Bibliography

1.—Barbour, Orville: The Treatment of Coughs with Suprarenal. I. Respiratory Infections. *Arch. Pediat.*, 49: 681-692 (Oct.), 1932. II. Measles. *Ibid*, 49: 779-781 (Nov.), 1932. III. Whooping Cough. *Ibid*, 49: 816-826 (Dec.), 1932.

2.—Macciota, G.: Cardiocirculatory Changes and Suprarenals in Measles. *Clinica Pediat.*, 13: 349-422 (May), 1931.

3.—Gordon, E. S.; Sevringhaus, E. L.; and Stark, M. E.: The Use of Adrenal Cortex Preparations in the Treatment of Asthenia. *Endocrinology*, 22: 45-50 (Jan.), 1938.

4.—Baumritter, P., and Wilkoszewski, E.: Oral Administration of Epinephrin in Vomiting. *Pediat. Polska*, 12: 460, 1932.

5.—(a) Kemp, W. N.: Treatment of Early Vomiting of Pregnancy with Suprarenal Cortex. *Endocrinology*, 16: 434-436 (July-August), 1932. (b) Kemp, W. N.: The Vomiting of Pregnancy Treated As a Temporary Relative Insufficiency of Maternal Corticoadrenal Function. *Med. Rec.*, 140: 239-241 (Sept. 5), 1934. (c) Freeman, W., and Melick, J. M.: Adrenal Cortex Therapy in Pernicious Vomiting of Pregnancy. *Obst. and Gynec.*, 29: 602-604 (April), 1935. (d) Freeman, W., and Melick, J. M.: Suprarenal Cortex Therapy in Vomiting of Pregnancy. *Ibid*, 33: 618-625 (April), 1937.

6.—Barbour, Orville: Congenital Pylorospasm. *Illinois M. J.*, 70: 244-250 (Sept.), 1936.

7.—(a) Hoskins, R. G., and Fierman, J. H.: The Pressor Effect of Prolonged Administration of Glycerin Extract of Adrenal Cortex. *Endocrinology*, 21: 119-121 (Jan.), 1937. (b) Hoskins, R. G., and Gottlieb, J. S.: Is the Pressor Effect of Glycerin Extract of Adrenal Glands Due to Epinephrin? *Endocrinology*, 20: 188-191 (March), 1936.

528 Jefferson Bldg.

PSYCHOLOGY OF SELLING

People expect canned salmon to be pink, and it is not easy to sell white salmon, even though an expert taster could hardly detect any difference.

Some years ago, when pink salmon in the Columbia River were late in arriving, a canner successfully took his chances on selling the white. On each can he placed a label: "This salmon is guaranteed not to turn pink in any climate."—FRED C. KELLY, *in* The Saturday Evening Post.

Blood Transfusion

A Simple Technic for Typing and Transfusion for the Small-Town Surgeon and Hospital

By

R. L. Gorrell, M.D., D.N.B., Clarion, Iowa

IT WOULD SEEM elementary that the lack of sufficient volume or proper composition of blood would indicate its replacement by an identical substance. Ten minutes' review of the complicated chemistry and physiology of the blood convinces anyone that such a complex structure cannot be even remotely approximated by any solution yet devised. Acacia solution, dextrose, saline, and continuous venoclysis of various types are often mentioned interchangeably with blood as therapeutic agents, and even given precedence.[1]

Acacia, a foreign substance, has only its viscosity to recommend it. Dextrose solutions, as commercially available, vary in strength from 5 to 50 percent.[2] The weakest strength of dextrose commonly used is 5 percent, yet this is fifty times as concentrated as the sugar content of the blood (0.1 percent, or 100 mg. per 100 cc.).

Another illusion concerning dextrose is that it is utilized by the body as a source of energy under all conditions. By careful determinations it has been found that it is often not metabolized postoperatively.[3] Apparently the sugar is first stored in depots (liver, muscles) that have been depleted. Urinalysis, after the intravenous injection of dextrose, reveals that a portion of the sugar spills over the kidney threshold, carrying with it the water needed to maintain blood volume. Moreover, dextrose may overstimulate the pancreas, so that excessive amounts of insulin are formed and the patient suffers a hypoglycemic shock some hours after the injection.

Venoclysis is of great value in dehydrated patients or in cases of uncontrollable loss of liquids (severe diarrheas, prolonged vomiting, intestinal fistulae), but it seems fairly certain it would upset the normal equilibrium between the blood stream, tissue fluids, and body cells.

Rowntree[3] says, "Although the blood participates in almost every chemical and physiologic process that takes place in the organism, its composition and volume are maintained practically constant. Many substances are held in the body in fixed amounts or in equilibrium—water, dextrose, protein, fat, sodium chloride, calcium, oxygen, and certain internal secretions. As a result, certain environmental factors of living cells are also held constant—osmotic pressure, temperature, alkalinity. If there were some clinical method of determining the damage done to body tissues, following the drastic changes in blood composition brought on by the intravenous injection of solutions, we might not use them so frequently."

Blood has the following advantages:

1.—It remains in the blood stream; other fluids leave it early. Groves[4] says, "Blood pressure readings after intravenous injections show that saline solution raises pressure for only two hours, when it falls down to or even below the original (as the solution passes out into the tissue spaces); gum acacia gives raised pressure for eight hours; fresh blood effects an improved pressure for several days." Crile[5] states, "In normal, as in exhausted animals, transfusion causes a rise in blood pressure even to double the normal, the increased pressure being wholly or in part sustained for at least two days. At the high level thus mechanically established, the nervous system exerts no control. After overtransfusion the spinal cord may be anesthetized or destroyed, the medulla divided, or the animal beheaded, without causing any change in blood pressure (suggesting a large transfusion preoperatively, especially for spinal anesthetics). Can an animal be killed by traumatic shock in the presence of a high blood pressure stabilized by overtransfusion? It can be killed, but the amount of trauma required is greatly in excess of that required to kill a normal animal not so transfused." In shock, hemorrhage, and minus decompensation, this condition is essential.

2.—There is no introduction of a foreign substance.

3.—All blood constituents are furnished, and in the same concentration as is found normally. The hemoglobin is directly utilized to remedy the usual anemia; the red blood cells carry on their work for a few days (transfused cells have been found four days after transfusion); anti-infective substances in the blood serum are of proved value, especially where the donor has had the disease (streptococcic septicemia[6], infantile paralysis[7], scarlet fever, undulant fever[8], measles); platelets are of value when coagulation will not take place spontaneously, as was illustrated in a personal case, where bleeding, following the extraction of a tooth from a man of 52 years, persisted intermittently for three weeks, despite the

administration of calcium gluconate intravenously and intramuscularly, intramuscular blood injections, hemostatic serums and fibrinogen, and local cauterization. Six hundred (600) cubic centimeters of unmodified blood were given him by the Percy tube method; the bleeding stopped in a few hours, and has not recurred in eighteen months.

If blood transfusion presents all these advantages, why is it not used more often, especially in small communities? I believe that many men, otherwise modern, do not use this life-saving procedure because of lack of technicians to carry on the usual blood grouping, and the length of time necessary to locate a suitable donor. Here is presented a simple method of matching, which can be done by the physician in his own office in little more than an hour's time. It does not require continuous attention, so that patients can be seen during part of the time.

There is little use in determining blood groups, because the same donors are rarely used again. In a small town, friends or relatives are always glad to furnish blood. Simple cross-matching of the recipient's blood and that of the donor is all that is necessary. "When the direct matching test is made . . . adherence to type is not necessary."[9] It is not necessary to determine hemolysis, as "hemolysis never occurs when agglutination is absent."[9] The method is not original; it is a simplification of Lee's modification of Todd and Sanford's technic.[10]

Indications for transfusions are: (1) Hemorrhage, acute or chronic; (2) shock; (3) prolonged infection, or chronic suppuration (chronic osteomyelitis, tubo-ovarian disease[11]); (4) anemia[12]; (5) promotion of healing in slowly-healing wounds[11]; (6) often makes a good surgical risk out of a poor one; shortens convalescence postoperatively (or after a severe illness); and (7) alimentary intoxication of infants and children.

Technic of Cross-Matching

From the recipient, remove from 2 to 5 cc. of blood by venipuncture, and drop three drops in a test tube containing from 4 to 5 cc. of 1.5 percent sodium citrate in physiologic saline solution (obtainable from any drug house), and the remainder in a dry test tube. The citrate-containing tube is shaken vigorously; this tube will furnish the red cells, as no clotting will take place. The other tube is centrifuged for ten minutes, so that the blood serum will be separated from the coagulum and red cells.

Blood from the donors may be obtained in the same manner and placed in two tubes marked with their initials. If the veins of either donors or recipients are hard to find, the tip of a finger or lobe of an ear may be used for needle puncture or puncture with a Bard-Parker knife blade, and ten drops of blood obtained, three of which are placed in the citrate solution, as above, and the remainder put in the dry tube for centrifugation. This latter method may not furnish enough serum from the recipient's blood, if it is necessary to match more than three or four donors.

If no centrifuge is available, the blood may be set aside for clotting and subsequent separation of the serum, or a string can be tied around the mouth of the tube and the latter whirled by hand until the serum separates.

The test tubes should be carefully marked with the initials of the person furnishing the blood as soon as they are filled. They may be identified by marking the initials directly on the tube with a glass (or china) marking pencil (obtainable at any drug store or supply house), or writing them with pencil on an adhesive strip fastened to the tube.

Ordinary glass microscopic slides are used for the matching. With the end of an applicator or match, a thin film of vaseline is rubbed around the edges and across the center of the slide (see A, Fig. 1). On the opposite surface of the slide are marked the donor's initials.

A drop of the recipient's serum is then placed in the center of one vaseline square on each slide. It may be dropped by gently pouring a drop or two directly from the test tube, or better, by using a pipette. (The pipette can be purchased inexpensively, or an equally satisfactory one made by heating the end of a section of glass tubing in a hot flame until soft and then pulling it out to a fine point by grasping the end of the tubing with a pair of pliers.) The tip of the pipette is introduced into the blood serum which ascends, or may be sucked up; the thumb is then placed over the upper end and the serum transferred to the slides, the serum being dropped by momentary release of the thumb pressure.

A drop is taken from the red-cell (citrate) solution of one of the donors and placed in the same square as the recipient's serum, and the two mixed by gently tilting the slide. The pipette is washed out by running water through it, and then a drop of the next donor's cell solution dropped on the slide marked with his initials, the pipette washed again, and so on.

At intervals for twenty minutes the slides are tilted so as to insure mixing of the two solutions. If the slides are placed on a strip of white paper it is much easier to observe the first signs of clotting.

If red clumps appear (I), marked clot-

ting is indicated and the donor is not suitable. If grains resembling red pepper appear (II), clotting has taken place and the donor cannot be used, except in the greatest of emergencies and with the transfusion given very slowly. The remaining slides are looked at under the low power of the microscope, as a final check against coagulation. If the red cells are nowhere clumped together (see III, Fig. 1), the donor is perfectly suitable.

A few cells adhering to form a row (rouleaux formation—IV) is without significance, as judged by my experience and that of others, after large numbers of transfusions.[12]

Cross-matching of the recipient's red cells and the donor's serum is of little practical importance, because the donor's serum is quickly diluted by the far greater volume of the recipient's serum during the transfusion. It may, however, be carried out on the unused vaseline squares of those donors surviving the first cross-typing by taking a drop of the donor's serum and the recipient's cell solution and watching for coagulation as above described. In emergencies, the latter step may be omitted. Some writers believe that it is not necessary.

By lining up all the tubes in a test tube rack, filling alternate ones with citrate solution and taking blood from all donors at one time (B, Fig. 1), a donor may be selected in an hour or less. If the emergency is acute, the closest relative may be typed first, as the chance of finding compatible bloods is much higher when someone in the immediate family is available.

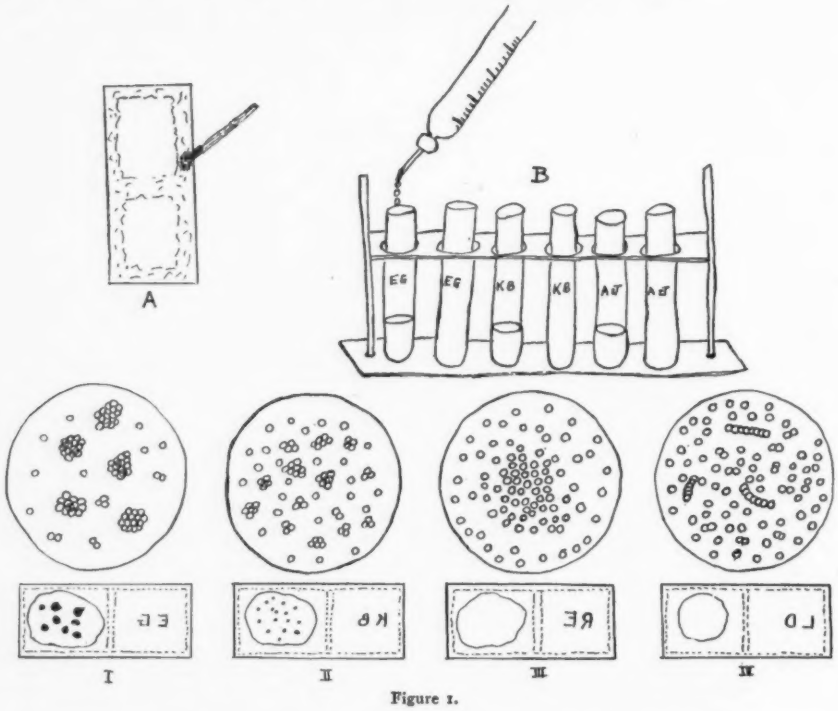


Figure 1.

It has been suggested in the literature that the "biologic" method may be used in emergencies. Ten to twenty cubic centimeters of blood are injected intravenously; if no chest oppression, dyspnea, or irritating disturbances take place after ten minutes, proceed as if the type was established. This sounds suspiciously like the advice an old farmer once gave me when I asked him if a rickety bridge would support my car. "Well, stranger, drive slowly onto it and if it's strong enough you'll get over without it breaking down."

Elsewhere in medical literature I have read the statement that the great majority of transfusions could be given without any preliminary typing and would never be followed by serious consequences. This is about as pertinent to the patient as the cheery statement made to him that practically everyone suffering from his condition gets well. Also, I am afraid the medico-

legal consequences of these procedures would be of more value to the legal profession than to our malpractice-conscious selves.

Method of Performing Transfusion

The simplest, easiest method of transfusion is by using citrate. It is the least dramatic, but most consistently effective. Equipment needed can be purchased for as little as $9, as follows: (1) A hypodermoclysis flask (a Vacoliter[13] or other container for intravenous solutions can also be used); (2) rubber tubing to connect the flask with the needle (four feet); (3) intravenous needles (the barrel of a 2 cc. syringe will fit snugly in the end of the tubing, will show when the vein is entered, and will give firm support to the needle); (4) a glass funnel, capacity one pint; (5) a glass mixing bowl, preferably with a lip for pouring and a handle (one to two pint capacity, depending on size of transfusion to be given); (6) two small cannulas with rounded ends (non-pointed), with a sharp inner needle for puncturing the vein; and (7) a glass stirring rod.

The arm band of a blood pressure apparatus is wrapped around the upper arm of the donor and the vein-bearing area (cubital region) painted with your favorite brand of antiseptic, following cleansing with soap, water, and ether. If the veins are large, a wheal of Novocain (procaine) solution is raised alongside the one selected and a large intravenous needle thrust through it directly into the vein. If the veins are small, or if the external saphenous vein (just above the external malleolus) is to be used, Novocain solution is injected for a distance of one inch along the course of the vein and an incision made with a small scalpel through the skin. The subcutaneous tissues are spread apart with a sharp-pointed scissors or mosquito forceps until the "blue" of the vein is seen. In case of shock or if the veins are very fine, a rounded white cord will be seen; it can be identified as a vein by introducing a needle or cannula, and forcing saline solution into it; only a vein will take the solution rapidly without bulging of the tissues. A small transverse nick in the vein will permit introduction of the cannula or needle without tearing the vein wall. Even if no vein is seen when constriction is applied, a transverse incision may be made confidently in the skin about one-half inch above the malleolus, as the vein will be found by carefully dissecting the tissues overlying the bone.

Fifty (50) cubic centimeters of 25-percent sodium citrate solution (obtainable in ampules already prepared) are placed in the mixing bowl for each 500 cc. of blood to be transfused. Several layers of nonraveling sterile gauze are placed in the bottom of the funnel. Hot, sterile saline solution is poured through the filter and funnel and through the tubing and needle, to demonstrate that the system is open and also to warm and wash it. A small amount of saline solution is left in the flask and tubing. Unless the recipient's veins are large, it is best to cut down on one and insert a needle or cannula.

The donor's blood is directed into the bowl, either directly from the needle or also through a short tubing. The flow of blood may be accelerated by having the donor "pump" his hand, in gestures resembling milking. The blood is stirred briskly with the glass stirring rod while it is being obtained and until ready to pour into the flask.

Physiologic saline solution is permitted to flow through the flask, tubing, and needle; then the blood is poured through the filter and into the flask. After all the blood has entered the flask, the funnel is removed and the opening plugged with a sterile gauze square. The flask is hung from a standard and hot water bottles suspended around it or placed over the tubing where it lies on the table.

If the blood enters the vein steadily, nothing more need be done except to disconnect the tubing just before all the blood has passed out of it. If the flow of blood slows or stops, disconnect the tubing from the needle, to make sure that the blood mixture is still flowing freely from the flask. If the needle is not patent, inject a little saline solution with a syringe.

If the veins are not cut down upon, a small pressure bandage over the point of puncture will prevent extravasation of blood. If a small vein, especially if the external saphenous has been used, ligation is often unnecessary. Two or three dermal sutures are inserted and a firm bandage applied. A loop of Number 0 catgut can be pulled under the vein, divided, and the vein tied off above and below the puncture, where necessary. If it is desired to use the same vein again, the dermal sutures may be placed deep enough to pass completely under the vein, above and below its opening, so that when tied the pressure will prevent blood from escaping. A figure-of-eight stitch accomplishes the same end with less tension.

The donor should be kept flat, or with head down, for at least an hour after giving 500 cc. A vigorous adult can give this amount with little loss in strength or ability to carry on work, after some hours' rest, hot coffee, and a good meal. For the next two weeks his diet should be high in iron. Plenty of fluids should be taken for thirty-six hours. If 750 cc. are given, the rest should be for a day. In the rare emergency, when 1000 cc. are taken, the donor's blood volume should be replenished by saline

solution and at least, 50 cc. of 50-percent dextrose solution. Women tolerate the loss of blood better than men, and men better than children.[14]

If there is not time for a Wassermann test, use an immediate relative with a negative history. This is not so dangerous as one would think when the usual figure of positive Wassermann reactions (10 percent) is considered. In the pure and chaste country, only 8 Wassermann tests were found positive out of 200 taken.[14] It is advisable to send tests in when a serious operation is considered. Also transferred by transfusion, have been malaria and measles.[14] Neoarsphenamine has been given with the transfusion and subsequently.

Contraindications to transfusion are: (1) Fulminating infections[11] (see dangers, below); (2) edema (lung, cerebral, peripheral); (3) myocardial weakness (not if carefully typed and slowly transfused); and (4) renal insufficiency.

Symptoms of incompatibility are: (1) tightness in the chest; (2) dyspnea; (3) lumbar and epigastric pain; (4) nausea and vomiting; (5) facial erythema; and (6) a short, dry cough.[11]

Dangers of transfusion are much overrated, if the typing is performed carefully and transfusion stopped if any of the above symptoms appear. Crile mentions acute dilatation of the heart occurring in debilitated patients during fast transfusions. Fever, urticaria, and anaphylactic shock have also been reported. A slight rise of temperature may occur.

In 47 transfusions, performed during 1935, 1936, and 1937, only one reaction of a serious nature occurred, which was in the case of a man, aged 32 years, who suffered compound, comminuted fractures and ragged lacerations of the forearm. The wounds were washed out with strong antiseptic (Sumner Koch's valuable articles on the avoidance of tissue injury by the usual strong antiseptics, and the uneventful course after thorough soap and water cleansing should be read more widely), and the arm lacerations sutured tightly by an optimistic surgeon. Nothing was done for days, despite the presence of fever, intense pain, and increasing sepsis. When finally brought in for amputation of the necrotic forearm, the patient was very weak. The transfusion (Percy tube, rather fast) had hardly begun when his pulse became imperceptible and the pupils dilated. The transfusion was stopped at once, Adrenalin (epinephrin) given, and the head of the table lowered. His pulse gradually strengthened during the next hour. The following day another donor gave him 600 cc., with marked subjective and objective improvement.

It has recently been suggested that the amount of an average transfusion is far too low for lasting benefit in severe anemias and shock, as 500 cc. of blood will elevate the hemoglobin only 10 percent. Continuous transfusion, using multiple donors (up to four), is sometimes used. We have carried this method out in only one case; two donors furnished 1200 cc., by the citrate method, to a patient with aplastic anemia.

For the rare hemolytic reaction, which presents severe lumbar pain, recent clinical research demonstrates that giving blood from another matched donor will prevent severe reactions (Hesse and Filatow).

If any donor is worried about the deleterious effects of giving blood once or twice, he might be heartened by knowing that a Parisian donor has given *1200 pints* in eighteen years.

Exsanguination transfusion (withdrawal of over half of the entire blood volume), as suggested by Brown, of Toronto, has given good results in alimentary toxemia of children.[15] A child should receive from 10 to 15 cc. for each pound of body weight. If an ample supply of blood could be obtained, this would appear to be an ideal "detoxifying" procedure in overwhelming septicemias. In carbon monoxide poisoning, the average-size transfusion has apparently been of little value. Removal of the red cells rendered useless by their firm attachment with the monoxide and replacement by fresh cells capable of carrying oxygen to the delicate cerebral tissues, might mean the difference between blindness and insanity and perfect health.

Transfusions may be given into (1) the cubital veins; (2) the external jugular vein (where it crosses the sternomastoid); (3) the peritoneum of infants and children (method of Sipperstein), by the introduction of a three-inch, large-bore needle through a Novocain wheal diagonally into the abdomen; and (4) the longitudinal sinus of infants (the Goldbloom needle prevents puncture of the wall of the sinus, as it may be set to the proper depths in advance).

Bibliography

1.—Carless, A.: "Manual of Surgery," p. 53, 12th ed., N. Y., Wm. Wood & Co.

2.—Gorrell, R. L.: Life, Death, Dextrose. *Ill. M. J.*, p. 69: 456, May, 1936.

3.—Rowntree, L. G.: "Cyclopedia of Medicine," p. 365. Phila., F. A. Davis, 1932.

4.—Groves, E. W. W.: "Synopsis of Surgery," p. 122, 8th ed., N. Y., Wm. Wood & Co., 1928.

5.—Crile, G. W.: "Surgical Shock," p. 253, 2nd ed., Phila., W. B. Saunders, 1922.

6.—Creswell, S. M.: Immunotransfusion. *J. A. M. A.*, pp.106 to 116 (Apr. 18), 1936.

7.—Sherman, I.: Acute Poliomyelitis. *Am. J. Dis. Child.*, 47:533, Mar., 1934.

8.—Willetts, E.: "Cyclopedia of Med.," p. 623, Phila., F. A. Davis, 1932.

9.—Haden, L. H.: "Clinical Lab. Methods," p. 213, St. Louis, C. V. Mosby, 1929.

10.—Berger, I. B.: "Blood Diagnosis," p. 101, St. Louis, Battle & Co., 1929.

11.—DaCosta, J. C.: "Modern Surgery," 10th ed., Phila., W. B. Saunders, 1932.

12.—Horton, B. T., and Watkins, C. H.: Transfusion, A Comparison of the Results Obtained by Blood Grouping and Direct Matching. *Minnesota Med.*, 17:711-714, Dec., 1934.
13.—Wenzel, J. J., and Hammer, H. J.: New Method of Indirect Blood Transfusion. *Am. J. Surg.*, p. 34: 119-121, Oct., 1936.
14.—Carless, A.: "Manual of Surgery," p. 45, 12th ed., N. Y., Wm. Wood & Co.
15.—Porter, L., and Carter, E.: "Management of the Sick Infant," p. 114, 3rd ed., St. Louis, C. V. Mosby, 1928.
16.—Author's unpublished data.
17.—Cabot, Hugh: Water (editorial). *Surg. Gynec. & Obst.*, 63:681, Nov., 1936.
18.—Hewlett, A. W.: "Pathological Physiology of Internal Diseases," p. 629, 2nd ed., N. Y., D. Appleton and Co., 1922.

210 E. Central Ave.

Cathartic Colitis

By

JOHN C. BROUGHER, M.D., Vancouver, Washington

IN THE routine examination of patients in a general practice in which obstetrics and gynecology predominate, I am impressed by the great percentage of those who present marked spasticity of the descending colon, with associated intestinal stasis. They have the usual symptoms of backache, gas and bloating, palpitations, tired feeling, headache, dizziness, and a bad taste in the mouth.

In reviewing the records of these patients, I find that, in over 40 percent of the cases, there is a history of constipation and either the regular or occasional taking of cathartics. I realize that anxiety and emotional instability are often factors in these early spastic constipations, but I do believe that the symptoms are greatly exaggerated because of the fact that the patients try one cathartic and then another until they develop a vicious cycle between a cathartic colitis and an anxiety neurosis.

The practice of medicine has for its chief function the relief of pain and the restoration of health to diseased bodies. One cannot fail to be impressed with the distress and discomfort manifested by the patient suffering from the common and often misunderstood condition termed irritable colon, but some physicians are merely distressed and annoyed by these chronic patients, because there is no relief to be given by surgery.

In looking over my notes on a lecture on pharmacology, given by the late Dr. Harold B. Myers at the University of Oregon Medical School some time ago, I found his statement that purgatives were an ancient treatment, used when a patient was ill from any disease. He also stated that it was an Egyptian custom to take cathartics three days out of each month. It was his opinion that, if cathartics could be avoided except on rare and special occasions, the intestinal tract would be very much better off.

It is definitely recognized that pre-operative catharsis increases the patient's abdominal distress after surgery. Experimentally, it has been shown that a cathartic of average severity will produce hyperemia of the bowel for three days after being given. At one time it was thought that calomel was a cholagogue, but it is now known that there is no increase of bile after taking calomel.

Psychic and Physical Factors

In order to help this type of patient, a thorough understanding of his present emotional conflicts is essential, but to treat him from a psychiatric viewpoint alone is inadequate. There must be a solution of the emotional problems, with a release of the anxiety tension, but this by itself is not, in my experience, sufficient.

In a previous article,[1] I gave as my basic management a diet of low residue and non-irritating, and also essentially high in mineral- and vitamin-rich foods. Vegetables are to be put through a sieve or ricer, to remove the fibrous part, until the clinical condition improves. Calcium and viosterol are given to relieve the symptoms of tetany and spasm. It is absolutely necessary to eliminate cathartics; and instead, drugs that aid in relaxing spasm of the intestines, such as belladonna or one of the barbital derivatives, should be given. In addition, the patient must develop new habits of living, as well as new interests in life. The physical must be built up, and recreation, which serves as an outlet for nervous tension, encouraged.

If a regular habit time can be established for bowel function, aided by taking agar-agar, psylla seed, or some bulky material, and relieving spasm with belladonna and heat to the abdomen, it is often possible to overcome constipation and relieve the patient of distressing symptoms of gas from intestinal fermentation. Until this habit is established, it is permissible to order a

1.—Brougher, John C.: The Irritable Colon. *Northw. Med.*, June, 1932.

two- or three-ounce, plain-water enema every day, to stimulate emptying of the lower bowel, thus establishing an habitual reflex. Many patients will obtain relief from their distressing symptoms, even though they may have taken a variety of cathartics for several years.

Exercise, especially walking, is excellent, both from the standpoint of massage of the intestinal tract due to the movement of the diaphragm, and relief of nervous tension.

The diet is important. There must be an adequate amount of bulk, and I think it is rather important to take small amounts of food at frequent intervals, because every time one eats, peristaltic action is stimulated. I often advise my patients to take fruit juice, especially orange, pineapple, or tomato juice, between meals, if there are no ulcer symptoms.* Vitamin B is valuable in stimulating peristaltic action, especially in children.

Poor muscle tone, with distention in the bowel and poor peristaltic action, in some instances is attributable to the fact that the individual eats too much bread and cereals, thus causing excess fermentation and an acid-ash residue with a low *p*H. Sansum[2] enumerates the more common symptoms of the acid-ash type of acidosis as malaise, lassitude, nausea and later vomiting, loss of appetite, headaches, weakness, sleeplessness, muscle aches, acid mouth, sour stomach, and acid urine. Mellanby[3] has shown that all cereal grains are anti-calcifying. Calcium is withdrawn from tissue reserves to neutralize excess acids. This causes a loss of muscle tone and often cramps. If this same individual will leave out the bread and cereals and, instead, eat fruits, vegetables, milk, nuts, with plenty of vitamin D and calcium, the muscle tone will greatly improve, and the tired feeling and other symptoms, so frequently complained of, will disappear.

Recovery is not spectacular in these cases and remissions are common, so that it takes a great deal of patience on the part of the physician to treat these patients successfully. It is sometimes said that colitis cannot be cured, but this is a great mistake, for all of us have seen patients get well and remain so as long as they avoid certain foods and live according to certain health standards. The proper management of this type of patient prevents his falling into the hands of charlatans and also keeps his respect for the followers of Hippocrates.

I believe that if physicians will warn parents as to the harm of cathartics for children, and not prescribe them so frequently for adults, there will be less disturbances of gastro-intestinal function. This will take concerted action by the medical profession, as there are many physicians now who are indifferent to the unpleasant results of cathartics and often use them instead of employing psychotherapy, to relieve nerve tension, and a proper diet, to relieve excessive fermentation. Just as it is wrong to give morphine to a patient with a bowel obstruction, I feel that it is wrong to give a cathartic to a patient who has a definite colitis.

In conclusion, I wish to emphasize the great harm that has come to the human race by the indiscriminate use of cathartics. Any method of treatment that is unphysiologic in its mode of action is harmful. The patient with irritable colon may or may not have an emotional instability but, if such a condition is present, it needs to be considered in treatment. The use of a smooth diet, with a high calcium and high vitamin content, is essential. New habits of living, with new interests, is a valuable aid in regulating bowel physiology.

410 Arts Bldg.

*These juices are now frequently permitted in ulcer cases, as they are actually less acid than the *normal* reaction of the gastric juice.—Ed.

2.—Sansum, W. D.: "The Normal Diet." Third Revised Edition. C. V. Mosby Co., 1930, p. 29.

3.—Mellanby, E.: *Proc. Royal Soc. of Med.*, London, 17:19-25, April, 1924.

THE VOICE OF MATURITY

I can safely say that I have arrived at the age when vanity and the fugitive ambitions of the flesh cannot influence my actions or thrill me with conceit of over-weening ambitions. I am reminded that I cannot take with me the medals, titles, or honors, which I now prize so dearly, on that last journey where no one is allowed to take with him anything more than his naked worth. I realize that, in the present situation, I should really be silent, as becomes one who has an epitaph inscribed over him and who can speak to posterity only through the voice of his friends and contemporaries.—RUDOLPH MATAS, M.D., at the dedication of the Rudolph Matas Library, Tulane University School of Medicine, New Orleans, La.

Physical and Office Therapy and Radiology

★

Associate Editors

FOR PHYSICAL THERAPY
Frank Thomas Woodbury, B. A., M. D.
Joseph E. G. Waddington, M. D., C. M.

FOR RADIOLOGY
Henry Schmitz, M. D., F. A. C. S., F. A. C. R.
M. J. Hubeny, M. D., F. A. C. P., F. A. C. R.

FOR OFFICE THERAPY
Ralph L. Gorrell, B. S. M., M. D., D. N. B.

Malignant Metastases in the Bones and Lungs*

By
MAXIMILIAN J. HUBENY, M.D., F.A.C.R., F.A.C.P.,
and
MAX MASS, M.D., Chicago, Ill.

A COMPREHENSIVE understanding of metastatic phenomena is part of the armamentarium only of the skilled pathologist, and too infrequently of the radiologist. True, the surgeon and internist may direct the radiologist's attention to the sites of predilection, but the radiologist, as a clinician and consultant, must confirm and direct attention to other areas. In instances of metastases of undetermined origin, the radiologist is often obliged to direct the inquiry. The success of surgical and roentgenray therapeutic measures is dependent on the radiologist's knowledge of these processes. What is most needed, apparently, is not a detailed description of isolated cases, but a general survey, a basis for rationalizing a given case.

Any attempt to reduce the entire subject of metastases to a common denominator is futile. Consider that malignant neoplasms may be disseminated by the venous, arterial, or lymphatic systems; by direct extension; by drop metastases; by retrograde permeation; by arterio-venous communication; can pass from the lesser to the greater circulation through the pulmonary capillaries, and from the lymphatic to the venous circulation; that great differences in different tumors and in the same tumor all present their own peculiar predilection; and finally, that most of the tumor emboli are autolyzed and never take root. This gives the problem a complexion of such overwhelming intricacy as to make possible only limited generalities.

Various contributors dealing with metastatic processes have made casual mention of a higher incidence in skeletal and pulmonary manifestations since the advent of thorough radiographic studies. Careful autopsy examination alone cannot give us an accurate estimate of the incidence of skeletal metastases. Nor can the radiographic findings, without pathologic confirmation, serve as an entirely dependable criterion. Certainly the primary site remains a mystery to the roentgenologist, in many instances. Such a correlation is singularly lacking in the recent literature.

The material herewith presented is derived from the records of the Cook County Hospital Departments of Pathology and Roentgenology, covering 1343 cases (1929 to 1938 inclusive). There were positive radiographic findings in approximately 74 per-

*From the Departments of Roentgenology and Pathology, Cook County Hospital.

TABLE I

*Skeletal and Pulmonary Metastases in 1,343 Autopsies for 10 Years (1929—1938 Incl.)**

Condition	Cases			Skeletal Metastases		Pulmonary Metastases	
	No.	M.	F.	No.	%	No.	%
Ca. of Large Intestine	159	109	50	1	.62	23	14.4
Ca. of Lungs	150	129	21	36	24.0	54	36.0
Ca. of Stomach	85	70	15	1	1.2	16	18.8
Ca. of Esophagus	83	78	5	7	8.4	26	31.3
Ca. of Prostate	79	79		16	20.0	12	18.0
Ca. of Cervix	79		79	1	1.2	14	18.9
Ca. of Breast	74		74	26	35.0	52	70.0
Ca. of Pancreas	69	52	17	3	4.3	12	17.4
Ca. of Bile Ducts	61	46	15	1	1.6	12	20.0
Acute Myelogenous Leukemia	56	36	20	2	3.5	1	1.7
Ca. of Kidney	47	36	11	10	21.2	37	78.8
Ca. of Tongue, Lip & Tonsil	41	37	4	2	4.8	7	17.0
Hodgkin's Disease	39	31	8	5	13.0	11	28.0
Ca. of Ovary	39		39	1	2.5	8	20.0
Ca. of Gallbladder	38	18	20	0	0	7	18.4
Ca. of Liver	26	21	5	3	11.5	11	42.0
Ca. of Urinary Bladder	23	16	7	4	17.4	1	4.3
Lymphosarcoma	23	22	1	7	30.4	9	39.2
Ca. of Uterine Fundus	22		22	3	13.6	7	31.0
Chronic Myelogenous Leukemia	18	11	7	3	16.0	1	5.5
Ca. of Testes	16	16		4	25.0	11	70.0
Sarcoma of Bone	16	12	4	2	12.5	8	50.0
Chronic Lymphatic Leukemia	15	14	1	1	6.6	1	6.6
Ca. of Larynx	15	13	2	0	0	0	0
Ca. of Nasopharynx	15	14	1	3	20.0	1	6.7
Ca. of Thyroid	14	8	6	6	42.8	6	42.8
Ca. of Small Intestine	10	7	3	0	0	0	0
Ca. of Skin	10	8	2	4	40.0	4	40.0
Melanoblastoma	8	5	3	3	37.5	5	62.5
Ca. of Adrenal Gland	8	5	3	5	62.5	2	25.0
Acute Lymphatic Leukemia	5	4	1	1	20.0	1	20.0
Totals	1343	897	446	161	12.0	359	26.7

*From the files of the Cook County Hospital, Dept. of Pathology. A number of these patients showed both skeletal and pulmonary metastases.

cent of the cases showing skeletal or pulmonary metastases. Despite the fact that the roentgenologic and pathologic findings fall far short of the actual incidence of skeletal metastases, a study of our autopsy material of the past ten years shows a considerable increase over previous estimates.

Skeletal Metastases

In 1343 cases of malignant neoplasias studied at autopsy, 161 showed skeletal metastases—an incidence of 12 percent. Symmers,[1] in a comparable series of 298 malignant cases, found secondary deposits in bone in 35 cases (12 percent). Joll,[2] at the London Cancer Hospital, reported 4.8 percent. Many other reports of large series of cases yield little or no information as to the incidence of skeletal metastases. Giles[3] reports 69 cases of skeletal metastases entirely on roentgenographic and clinical findings. Geschickter and Copeland,[4] in approximately 5000 malignant cases, found 334 skeletal metastases (an incidence of about 7 percent), 37 of which were of undetermined origin. The incidence of skeletal metastases in a clinical series is, of course, lower than that found in autopsy material, because of the advanced character of the disease in the latter. This is more than offset by the fact that, in a clinical series, there is a much larger number of cases having a high incidence of skeletal metastases, such as carcinoma of the prostate and breast. However, no completely reliable estimates can be obtained from clinical material alone.

In subsequent paragraphs an attempt is made to summarize the findings and to emphasize the contention of this paper that estimates of the incidence of skeletal and pulmonary metastases fall far short of ac-

tuality, and that, as regards skeletal manifestations, the solution of the problem lies with the roentgenologist. No regard is given to the distribution and type of metastases, because it is believed they bear no definite relationship to the primary growth.

Hitherto-negligible sources for skeletal metastases, such as carcinoma of the esophagus, present astonishing findings in our series. In 83 cases, 7 instances of bone metastases were recorded—an incidence of 8.4 percent. Only rarely have single cases been reported in the literature heretofore (Halluin et al,[3] Jenkinson,[4] Copeland and Geschickter[4]). Indeed, Jenkinson was able to collect only 41 cases of gastro-intestinal carcinoma with skeletal metastases in the entire literature up to 1924. In our series alone 16 cases were found. In 1,600 cases of carcinoma of the stomach, seen at the Mayo Clinic in 10 years, only one instance of skeletal metastases was found.

In 23 cases of lymphosarcoma, 7 showed skeletal involvement—an incidence of 30 percent. In 164 cases reported by Craver and Copeland,[7] an incidence of 10.4 percent was found. As regards myelogenous leukemia, Craver and Copeland found only 1 instance in 83 with heteroplastic deposits in bone; whereas 5 cases in 74 were noted in our series (6.6 percent), a total of 7.4 percent in 94 cases, including 20 cases of lymphatic leukemia, in which 2 presented heteroplastic skeletal involvement. Hodgkin's disease showed an incidence of 13 in 39 cases, which is in fair agreement with that observed by others (Baldridges and Awe, 13 percent; Uehlinger, 33 percent; Barron, 20.8 percent; Kimpel and Belot, 12.1 percent). The largest series, by Dresser,[8] gave an incidence of 10.7 percent in 149 cases.

Carcinoma of the liver (cholangiocellular and hepatocellular) presented an incidence of 11.5 percent (3 cases in 26). Only rarely have single instances been reported heretofore in the literature (Brodin,[9] Copeland and Geschickter,[4]). In 69 cases of carcinoma of the pancreas 3 were found with bone deposits. Only 1 reported instance was found in a large series reviewed.

In 16 cases of osteogenic sarcoma examined at autopsy, 2 cases of distant skeletal metastases were recorded (humerus to vertebrae, and innominate to skull).

Carcinoma of the testes presented 4 cases in 16 with metastases to bone (25 percent). Thorek[10] cites Mauclaire as reporting only one instance of skeletal metastasis in 81 cases; whereas Copeland and Geschickter[4] report 1 instance in 42 teratomas and 1 in 13 seminomas, a total incidence of 3.6 percent.

In epidermoid carcinomas from the oral cavity, nasopharynx, and skin, 7 instances of skeletal metastases in 25 cases were found (28 percent). Giles[1] reports 8 cases, but most of these were probably extensions from the primary site, and not true metastases. Joll[2] stresses the point that squamous-cell carcinoma has a considerable tendency to metastasize to bone, and that this is not sufficiently appreciated.

In 23 cases of carcinoma of the urinary bladder, 4 instances of skeletal metastases were noted; whereas only single, rare instances have hitherto been reported.

In 150 cases of bronchogenic carcinoma, 36 cases (24 percent) were found with skeletal metastases. Ewing[11] quotes Adler as citing an incidence of 15 percent in 374 cases. Grove and Kramer,[12] in 21 cases, found 29 percent with metastases to bone.

In 74 cases of carcinoma of the breast, 26 (35 percent) presented skeletal metastases. In 757 deaths in cases of carcinoma of the breast, recorded at the Surgical Pathological Laboratory of the Johns Hopkins Hospital up to 1930, 89 cases (11.8 percent) showed skeletal metastases. S. W. Gross[13] found an incidence of 20.5 percent; Carnett,[14] 49.5 percent; Kaufmann,[15] 53 percent in 63 autopsies.

Other estimates in our skeletal series are correspondingly high. In carcinoma of the thyroid, 6 of the 14 cases showed skeletal involvement (42.8 percent). Ehrhardt[16] found 18 percent; Kaufmann,[15] 37 percent; Neusser,[17] 36.9 percent; A. B. Moore[18] found only 2 instances of bone metastases in over 200 cases of carcinoma of the thyroid; Hinterstossier, quoted by Ginsburg,[19] found 20 percent of skeletal metastases in 50 cases. Carcinoma of the adrenal gland presented 5 cases of bone metastases in 8 (62 percent); Neusser[17] found 50 percent. Skeletal metastases were found in 3 of 8 cases of melanoblastoma—an incidence of 37.5 percent; Copeland and Geschickter,[4] in 169 cases, found 1.7 percent.

Neusser[17] and Levin[20] estimate the incidence of skeletal metastases from carcinoma of the prostate as 70 percent and 66 percent, respectively; Cone[21] reports 60 percent of 70 cases; Kaufmann[15] is quoted as finding 41 percent in 24 cases. These findings would indicate that the prostate is by far the greatest source of skeletal metastases. It is very likely that these high estimates are not a dependable criterion in large series. In Cone's[21] estimates, a number of his cases were direct extensions from the primary site. It also appears that many of these cases were selected. On the other hand, Copeland and Geschickter,[4] in 1,020 cases of carcinoma of the prostate, report only 12 percent. Only 50 percent were radiographed, which would imply that, of about 500 cases radiographed, less than 20 percent showed skeletal involvement. Bumpus[22] reported 41

cases of bone metastases in 362 cases of prostatic carcinoma, of which 135 had x-ray examinations—an incidence of 30.3 percent. Our series coincides with the latter group, showing a 20 percent incidence in 79 cases.

Single cases of bone metastases from carcinoma of the stomach, cervix, extrahepatic bile ducts, ovary, and sigmoid colon are included in our series.

A higher incidence of skeletal metastases is undoubtedly found in autopsy material, but it is fair to assume that these metastatic foci are present long before the case comes to autopsy and can be found when a diligent search is made. Whether unrecognized skeletal metastases may in some measure explain deaths from relatively insignificant primary growths is not clear, but certainly a profound effect is exerted on bone marrow function.

Pulmonary Metastases

The pathologist always finds a higher incidence of pulmonary metastases. In our entire series, 359 presented metastases to the lung or pleura or both—an incidence of 26.7 percent. Farrell,[23] in 78 autopsy cases in which secondary malignant disease was noted in the lung, found 9 percent from the breast (our series showed 14.57 percent); from the gastro-intestinal tract, 27 percent (our group, 18.1 percent). His series also included 12 cases of sarcoma and single instances of melanoblastoma, teratoma testis, pleural endothelioma, etc. This illustrates wide differences in the selection and chance occurrence of lesions in postmortem material.

A detailed analysis of our pulmonary series, with comparisons, is unnecessary, because the pathologist finds the maximum possible incidence. The roentgenologist can only approach his percentages.

Summary

1.—An analysis of the incidence of skeletal and pulmonary metastases, in 1,343 cases of malignant disease coming to autopsy, reveals a considerable increase over previous estimates.

2.—The increased incidence in skeletal metastases is attributed to more thorough radiographic study and careful postmortem examination.

Bibliography

1.—Symmers, D.: The Metastatic Tumors of Bone. *A. J. Med. Sc.*, 154:225, August, 1917.

2.—Joll, C. A.: Metastatic Tumors of Bone. *Brit. J. Surg.*, 11:38-72, 1923.

3.—Giles, Roy G.: Metastatic Tumors of Bone. *Texas State J. of M.*, Vol. XXVII, pages 600-604, Dec., 1931.

4.—Geschickter and Copeland: "Tumors of Bone." *Amer. Jour of Cancer*, revised edition, 1936.

5.—Halluin, B. D., Belle, and Desbonnets: *Bull. et mem. Soc. de radiol. med. de France.*, 22:404-405, 1934.

6.—Jenkinson, E. L.: Primary Carcinoma of the Gastrointestinal Tract Accompanied by Bone Metastases. *A. J. Roentgenol.*, 11:411, May, 1924.

7.—Craver, Lloyd, F. and Copeland, Murray M.: *Arch. of Surg.*, Vol. 28, pp. 809-824, May, 1934.

8.—Dresser, R., and Hampton, A. D.: *A. J. Roent.*, 25, 739, 1931.

9.—Brodin, P., Bolgert, M., and Placa, A.: *Ann. d'anat. path.*, 12:355-359, 1935.

10.—Thorek, Max: "The Human Testis and Its Diseases." J. B. Lippincott Co., 1924.

11.—Ewing, J.: "Neoplastic Diseases." ed. 3. Philadelphia: W. B. Saunders Co., 1928.

12.—Grove, J. S., and Kramer, S. E.: Primary Carcinoma of the Lung. *A. J. Med. Sc.*, 171:250 (Feb.), 1926.

13.—Gross, S. W.: Skeletal Metastases in Carcinoma of Breast. *A. J. Med. Sc.*, 95:219, 1888.

14.—Carnett, J. B.: *Surg. Clin. North Amer.*, VII, 31, 1927.

15.—Kaufmann, E.: Sekundare Geschwulste der Knochen. *Spezielle pathologische Anatomie* 1:954, 1922.

16.—Ehrhardt, O.: *Brun's Beitrage z. kl. Chirurgie*, 35, 343, 1902.

17.—Neusser, E.: *Wien. klin. Wchnschr.*, V, 41, 1892.

18.—Moore, A. B.: A Roentgenological Study of Metastatic Malignancy of the Bones. *A. J. Roentgenol.* (n.s.) 6:589-593 (Dec.), 1919.

19.—Ginsburg, S.: (1) *A. J. Roentgenol.*, 18, 203, 1927. (2) *Arch. Int. Med.*, 39, 571, 1927.

20.—Levin, G.: *A. J. Path.*, VI, 563, 1930.

21.—Cone, R. C.: Carcinoma of Prostate. *Urol. & Cutan. Rev.*, 39:101-104, 1935.

22.—Bumpus, H. C. S.: (1) *Gyn. & Obst.*, XLIII p. 150, 1926. (2) *Surg. Gyn. & Obst.*, XXXII p. 31, 1921.

23.—Farrell, J. T.: 78 Cases of Pulmonary Metastases Seen at Autopsy. *Radiology*, 24:444-451, 1935.

25 E. Washington St.

SECURITY OR CONSCIENCE?

If men live by bread alone, then security is more important than conscience. And if that is the state of our morality, then the purchase of an election is a fitting process.

Are we to have a citizenry of the future, satisfied to be a government number, scheming to obtain better relief, ambitionless, hopeless, living on government between elections and measuring the value of a candidate by the yardstick of his boasts as to how efficiently he will debauch them?

There can be no dodging the moral issue that faces this country. Politics is trivial in comparison with it. We may choose our officials wisely or stupidly and survive. But if we forsake our traditional moral basis, then we must perish.—GEORGE E. SOKOLSKY, *in* The Commentator.

★ Notes and Abstracts ★

Exercise in Chronic Cardio-Vascular Disease*

BOTH THE LAITY and the medical profession (many of them) still believe that there is nothing so good for an individual with chronic cardiovascular disease as rest. The idea is based on a very definite fear of exercise. This fear has been accentuated by the unfortunate publicity often given to the sudden death of an individual, while carrying out a particular effort, such as playing golf, riding horseback, or public speaking. There is no publicity when a man with chronic cardiovascular disease dies in bed —where most of them do die.

It is now well recognized that the aged ill should not be kept in bed, but it has not been sufficiently appreciated that the middle-aged patient with impaired circulation can also be greatly harmed by too prolonged rest in bed.

In bed, massage, passive movements, and respiratory exercises may be carried out. Then the patient is ready for resistance exercises, in which he is told to move some part of the body, and the nurse gently resists the movement. It appears that these latter exercises do not increase the blood flow, until it is realized that resistance, even against one finger, may call into play all the muscles of the body.

When the patient is ready to walk, he should walk a certain distance each day, and gradually increase it as his exercise tolerance increases. *The man with heart disease should exercise early in the morning,* as exercise taken too late in the day may interfere with rest or sleep by giving rise to great fatigue or great stimulation.

LOUIS F. BISHOP, JR., M.D.
New York City.

Arch. Phys. Ther., Aug., 1938.

Diagnosis of Coronary Disease with Roentgen Rays

CORONARY DISEASE IS ONE of the most common causes of death, and roentgenologic study is an important additional means of diagnosis.

The typical case of coronary thrombosis shows an alteration in the contour and contractions of the heart. There is a loss of convexity of the left heart border, with diminished amplitude of pulsations in this area. The appearance of an increase in the size of the heart in coronary thrombosis is an indication of heart failure. Coronary sclerosis produces a moderate but general diminution in the amplitude of cardiac contractions, *Angina pectoris presents no alteration in cardiac contour or size,* unless there is associated cardiopathy.—GEORGE LEVENE, M.D., in *Radiol.*, Mar., 1938.

[The general practitioner often has the belief that the x-rays will furnish convincing evidence of cardiac disease or myocardial damage. It is the opinion of cardiologists that the roentgen-ray plate often fails to show evidence of cardiac enlargement in its earliest stages, and that diagnosis can be made by consideration of the whole clinical picture.—ED.]

Thermal Effects of Short-Wave Diathermy on Muscle and Bone

THE INTERNAL TEMPERATURE of the bone of a limb can be raised by applying short-wave diathermy locally, to an extent greater than the rectal or general body temperature. The temperature of the muscle in the limb is elevated to a higher degree than that of the bone marrow.

When a limb is exposed to short-wave diathermy, the experimental results indicate that the temperature of its tissues decreases from the skin, which is nearest the source of energy, toward the marrow of the bone.—S. L. SOBORNE, M.D. in *Arch. Phys. Therapy,* Aug., 1938.

Electrocoagulation of the Tonsils*

ELECTROCOAGULATION of the tonsils apparently produces an autogenous vaccine in vivo, as indicated by the change in the opsonic index. It has these advantages: (1) No hemorrhage; (2) complete extirpation of the tonsils; (3) absence of shock; (4) preservation of normal pillars; (5) the patient keeps at work; (6) no surgical pneumonia; (7) the tonsils are sterilized in situ.

I have noticed that, after an electrocoagulation, a change in the patient's mental and physical state takes place.

One tonsil is treated at a sitting and the other, the following week. The local anesthetic is composed of cocaine hydrochloride

Med. Rec., July 20, 1938.

crystals and pure phenol, equal quantities, giving a fifty-percent solution by volume. It is applied with a cotton probe to the face of the tonsil. Such a solution is a rapidly acting anesthetic, a deodorant, and an antiseptic. I use the bipolar method and apply the active electrode needle to the tonsil, which becomes more blanched. Treatment is started at the upper tonsillar pole and continued downward in the manner of painting, being careful to avoid penetration of the tonsil tissue. The duration of a single treatment should be short.

ALBERT P. SELTZER, M.D.
Philadelphia, Pa.

Acid Treatment of Cervical Erosion*

THE VAGINA is normally acid. The acidity inhibits the growth of bacteria and fungi. Do not use alkaline vaginal therapy (soda, lysol douches, alkaline tampons) or sanitary protection in the vagina at the time of menstruation, as these procedures concentrate alkalies within the vagina.

I have been using acid replacement therapy in cases of cervical erosion. The woman inserts a large gelatin capsule (veterinary), containing 11 cc. of a mixture of betalactose (80 percent) and boric acid (20 percent by volume) into the vagina every 24 hours, until such time as the powdered material fails to dissolve; then uses one every 4th to 6th day, as needed.

White vinegar douches (3 tablespoonfuls to 1 quart of warm water) are taken during menstrual periods. The cervix is carefully observed at the end of menstruation. If the erosion is healing, the patient is continued on the same treatment.

For those cases which do not fully heal, there should be a removal of the diseased gland-bearing area of the cervix.

MELVIN A. ROBLEE, M.D.
St. Louis, Missouri.

Ovarian Hormone in Breast Carcinoma

THERE IS A POSSIBLE RELATIONSHIP between the ovarian hormone and malignant disease of the breast. Irradiation of the ovaries should be performed, if the patient is still menstruating. Our experience with irradiation of metastases has been that pain has been relieved in the great majority of instances.—H. H. TROUT, M.D., F.A.C.S. in *S.G.O.*, Sept., 1937.

*Arch. Phys. Therapy, Aug., 1938.

Pituitary Basophilism

SWELLING OF FACE AND FEET; irregular menstrual periods; growth of hair on the face, associated with acne-like eruption; dryness of the skin; and puffiness of eyes are symptoms often associated with pituitary basophilism, and relieved by deep x-ray therapy to the pituitary gland.—P. BROOKE BLAND, M.D., and L. GOLDSTEIN, M.D., in *S.G. & O.*, Nov., 1937.

★ Books ★

Roentgen Therapy

POHLE

THEORETICAL PRINCIPLES OF ROENTGEN THERAPY. *Edited by* ERNST A. POHLE, M.D., Ph.D., F.A.C.R., *Professor of Radiology and Chairman of the Department of Radiology and Physical Therapy, University of Wisconsin, Madison, Wisconsin. Collaborators: R. R. Newell, M.D., F. W. Stenstrom, Ph.D., Lauriston S. Taylor, Ph.D., and Francis Carter Wood, M.D., Director Institute of Cancer Research, Columbia University. Philadelphia: Lea and Febiger. 1938. Price, $4.50.*

THIS book has been written to serve two groups: the radiologist who must have a thorough understanding of the theoretical principles underlying roentgen therapy, and the research worker who is less interested in the clinical application of roentgen rays than in other phases of the subject. It deals exclusively with theoretical principles.

This volume, which furnishes the basic facts of the physics of x-rays, the function and construction of the apparatus, dosimetry, and the reaction of normal and diseased tissue to irradiation, together with the author's other book on the clinical application of roentgen rays, may be considered as a complete course on theory and practice of roentgen-ray treatment.

★ News ★

Fever Therapy Technicians Organize

THE NATIONAL ASSOCIATION of Fever Therapy Technicians, Inc., came into being on October 6, 1938, and Miss Emily Mench, of Michael Reese Hospital, Chicago, was elected its president for the ensuing year. All who are interested in this organization can obtain full particulars by writing to its secretary, Miss Lillian Conrad, 646 No. Michigan Ave., Chicago, Ill.

A Living for the Doctor

The Business of Medicine and the Art of Living

★

Associate Editor: **Ralph L. Gorrell, B.S.M., M.D., D.N.B.**

Avocations

WHEN MOST OF US were lads in grammar school, one of the genial habits of the teachers was to write on the blackboard each day a "gem of thought," culled from the writings of some more or less eminent person. These we copied in notebooks devoted to that purpose and memorized *ad libitum.* It is surprising how some of those "old saws" stick in the memory, and there is little doubt that they definitely influenced many lives, for we were plastic, then, and believed implicitly anything which was quoted as the opinion of some "great man."

One of those things which has remained with us, and which is still accepted as a doctrine by many went like this:

"The man who seeks one thing in life, and but one,
May hope to achieve it before life is done:
But he who seeks all things wherever he goes
Only reaps from the hopes which around him he sows
A harvest of barren regrets."

Of course, there are "single track minds" to whom this dictum applies with much force, but for the average man (if there is such a critter, which seems doubtful), we take issue with this "gem," thus:

The man who seeks one thing in life, and but one,
Will be a fine mummy before life is done:
But he who seeks all things may have put away
Less cash in the bank at the end of the day—
But he's lived a rich life, all the same.

Concentration on one's job, *during working hours,* is a fine and necessary practice for every man who really desires to get somewhere in his line; but it is poor business to carry the office home at night or lug it around on Sundays and holidays. Every athlete knows that it is possible to overtrain and "go stale."

There seems reason to believe that there are too many "stale" doctors in this Land of ours, although the percentage of sensible ones grows greater each year, and our profession holds more of interest and variety than almost any other. We therefore suggest, as an antidote to or prophylactic against this disastrous condition of staleness, the adoption and active pursuit of one or more definite avocations—known colloquially as *hobbies.*

Various games and sports—golf, tennis, fishing, hiking, archery and the like—are highly desirable and necessary, for a sedentary man, but they are *not enough* for people who are sufficiently accustomed to using their brains to make such exercise agreeable and free from that creaking which always issues from rusty machinery in action. Physicians and other thoughtful people need hobbies which will exercise the intellectual and emotional, as well as the physical, faculties and which can, therefore, be pursued with eagerness and profit, long after the animal parts of us have ceased to give us a sense of exhilaration in their use.

Many of these avocations are such that, while they furnish relaxation from our customary, bread-winning labors, they will have a positive, if indirect, effect in in-

creasing our efficiency as physicians. Among these may be mentioned the study of various foreign languages, philosophy, psychology, sociology, metaphysics, zoology or botony (in any of their branches); the practice of writing of all sorts, with the necessary research which must accompany any serious literary effort; photography (with which may be combined much salutary physical exercise in the open air); and a number of other matters.

Nor are the mental faculties alone to be cultivated. The best means of warding off the encroachments of senility is by keeping the emotions fresh and responsive and enthusiasm at a high pitch. The study or (better) the *practice* of some form of artistic expression—music, painting, sculpture, poetry, bookbinding, conversation, or any one of a score of other arts—is of the highest value in this connection.

This is not something to be put off until one "has more time" or until the muscles begin to fail and the joints grow stiff. The man who has not developed interest and facility along these lines during his active years, will not do so when he is old, though he can follow them up, *after they are once well started,* so long as his physical organism holds together and his brain continues to function.

NOW is the time to begin work upon those avocations which will fill the declining years with joy and satisfaction and assure a "green old age."

G. B. L.

Scientific Skepticism (Poliomyelitis)

In as amusingly written an article as has appeared for a long time, Lumsden, medical director of the United States Public Health Service, exposes the great deficiencies in our present knowledge of infantile paralysis (*Southern Medical Journal,* May, 1938).

He feels (1) that we are not sure whether the disease that we call poliomyelitis is one disease or a group of two or more diseases; (2) that we do not know whether it is an ancient or a comparatively new disease; (3) that we do not understand the nature of the causative factors; (4) that the diagnosis of the disease, as it is designated and reported, is often uncertain and frequently erroneous; (5) that *we do not know* the main sources of the disease nor, with certainty, *whether the disease is infectious,* nor even the portal of entry; (6) that methods proposed for specific treatment are of uncertain value.

He believes that the disease is carried by an insect and that the usual host is a warm-blooded bird or beast, which theory would account for the appearance of the disease in widely scattered communities and for *the fact that adjoining counties may have as many as 50 cases in one and none at all in the other.* Much study is necessary to confirm or deny this hypothesis; *it may be a clear-thinking general practitioner who will solve this serious problem.*

He further states: "Specific measures, such as the use of convalescent blood, are of little proved value; poliomyelitis vaccines are valueless, and in some instances dangerous; the nose sprays are definitely in the experimental stage."

It is good for our scientific souls to peruse such an article now and again. So many reports in the literature are complacent records of preconceived ideas and rehashes of previously expressed thoughts, that a frank questioning of the extent of our knowledge comes as a salutary shock.

His quizzical footnote should be carried in mind (the proverbial grain of salt): "An 'authority' may be defined, for our present practical purposes, as one who has written or spoken much on a given subject."

It is as important to be aware of what we do not know as to learn what is definitely established.

R. L. G.

CHARITY BEGINS AT HOME

Remember the time, during the World War, when we all had to go without meat and wheat, and even without heat, in order to conserve necessities and help the nations of Europe to fight their wars? We wonder if anybody will ever have the nerve to propose such a thing to us again. You see, we stay-at-homes received no bonus. But we paid, pay, and will continue to pay.—Kalends of the Waverly Press.

★ Notes and Abstracts ★

Propaganda*

THEY CUT OFF THE HANDS of little children. Bombs were dropped on a group of playing orphans. Old ladies were beaten and tortured. No nation of integrity could stand by and permit such outrages. Massacre! Brutality! Insult!

You recognize these phrases. They are war propaganda.

The United States, in the coming months, will be flooded with such propaganda. Some of it will be true; some will be false. All will be manipulated in the telling to produce the particular effect the propagandist desires.

Your only weapon against the onslaught of this most modern and most effective of all the instruments of war is a knowledge of the rules by which the propagandist works. Psychologists have studied this art. They know how to use propaganda. They can also put you on your guard against it.

Watch for these earmarks of propaganda:

1.—Propaganda appeals to the emotions, not to the intelligence.

2.—Propaganda offers slogans — high-sounding phrases. *Deutschland ueber alles!* Make the world safe for democracy! Defend these tortured creatures! Make the seas safe! Keep the home fires burning! *Gott mit uns!* Stop the march of the dictators! Crush the Communist Curse!

3.—Propaganda often conceals its source. Printed matter without signature; vague group names or "Leagues" without headquarters; statements without their source other than loose "everybody says" or "it is well known";—these betray the propagandist.

4.—Propaganda urges haste, for delay permits the reason to act.

5.—Propaganda uses indirection, innuendo, insinuation, and suggestion. Direct statements that can be disproved are avoided.

6.—Propaganda takes advantage of the strong attachments already in men's hearts. Propaganda would make it appear that Church, Government, freedom, honor, and family are being attacked and can only be defended by the course being urged.

The war propagandist is loud in asserting that he wants only peace. Seldom indeed will he admit that he wants war.

Adroitly he suggests that we may be "forced into it." Or he intimates that a little fighting now will serve to "prevent war."

The war propagandist denounces certain evils—conspiracy, plotting, oppression, encroachment of rights, force, violence, torture, terrorism, injustice—and the attempt is made to associate these evils with the "enemy."

A favorite device of the propagandist is the representation of war as a crusade for right and justice.

Neutrality is always subject to vigorous attack from both sides—propaganda being the "bomb" used to drive holes in such a policy.

It was the same in 1918. Either you approved entrance of the United States into the World War or you were pro-German. In times of national stress, the middle road, the compromise, the neutral stand may be gradually abandoned. It is hard to keep a cool judicial attitude during a war fever.

MARJORIE VAN DE WATER

Science News Letter, October 8, 1938.

Medicine As a Career

I AM REMINDED of the remark made by Dr. J. D. Barney, of Boston, who defined a successful surgeon as one who has two automobiles, a $25,000 a year income, and a wife who will be a widow for 20 years.

The time has come when those of us with sons, and those of us from whom young men seek advice, hesitate to urge medicine as a profession. There is no longer any assurance that a boy will secure an adequate return for the years he must spend in an expensive education. Only the young man who can feel *repaid by the service he renders*, whether or not he is paid for his time and skill, should enter the medical profession. Even then he must face the fact that, if he makes a success of his career, he may ruin his health or shorten his life.—WAYLAND MORRISON, M.D., in *W. J. S. G. & O.*, May, 1938.

Special Duty Nurses

THE COURT OF APPEALS of New York has upheld a decision of the lower courts that a nurse, employed to care solely for a particular case and paid directly by the patient, is not an employee of the hospital, but of the patient (Kamps v. Crown Heights Hospital, Inc. Decided by Court of Appeals, affirming 296 N. Y. S. 776 [*New York Law Journal*, March 9, 1938.]

This decision is of interest especially to physicians who operate their own hospitals, inasmuch as they will thus be free from certain responsibilities which they might incur as owners of an institution, although they will still have the medical responsibility.

Morale*

THE SOLDIER IN THE TRENCHES, exposed to the onslaughts of the enemy, is likely to look upon the outcome of any battle with a rather limited viewpoint. In case the local action directly on his front is going well, he may become optimistic about the situation all along the battle line. If, on the other hand, his front is hard pressed, a pessimistic attitude is bound to be his. He cannot understand the policy of a high command which allows such a difficult situation to exist. Consequently his faith is shaken and his morale is at a very low point.

The surgeon in his daily struggle against cancer is in much the same position. He is up against a relentless enemy, constantly on the alert to take advantage of any break in his favor. Many times the operator is thrown into action merely to make a demonstration against a strongly advancing force to fight a delaying action. It is not surprising, therefore, that occasionally the surgeon loses heart and thinks that the battle is lost all along the line. At times he even goes so far as to admit that he is always in a losing fight, when this enemy, cancer, is his opponent.

The man on the firing line should realize, however, that, back of the front, efforts are being made which compare very favorably with his own. Ammunition is constantly being provided to supply him for the continuation of the battle. The higher command is repeatedly fighting over the engagement in miniature (on experimental animals), trying out new weapons which may at any time be rushed up to the front for his use. New engines of destruction are being invented to be let loose in an unexpected attack on the opposition. New plans are proposed, tried out, and rejected if they do not offer promise.

There is, perhaps, a real need for a more unified command, but as yet no outstanding commander, capable of assuming this position, has appeared. The soldier in this campaign should also remember that whereas, on his own front, the battle seems to be all against him, on other parts of the line there have been successes, local victories of consequence. That the fight is not altogether hopeless is evident when, at a reunion of veterans, their past victories are recalled. (Symposium on Cancer, American College of Surgeons.)

The surgeon owes it to his colleagues and to the civilian population who depend upon him, to rid himself of the pessimistic attitude. He must brace up the morale of the whole population, or else the battle will indeed be lost. In no other war has it ever been more necessary for the fighting man to "travel hopefully," in the words of Stevenson, than in this conflict against the scourge of mankind—cancer.

JOHN J. MORTON, M.D.

Rochester, N. Y.

*Reprinted from *Surgery, Gynecology and Obstetrics*, November, 1933, and the *Bulletin of the American Society for the Control of Cancer*, Vol. XV, No. 12, December, 1933.

Faith in Medical Practice*

IN PRIVATE PRACTICE the personality of the doctor, the psychologic attitude toward his patient, and his ability to gain that confidence with which no one can compete, is the essence of this subject. Patients seeking help, physical or mental, from a physician want to be inspired with faith. This kind of faith is very close to that which offers consolation from religion. It is this very conception that has made possible so many cults. During all the centuries of man's existence, religions have flourished and the wise leaders of these have found that the proper staging of scenery and actors is necessary to produce the best results. The general practitioner, as well as the specialist, in every branch of medicine, must fight this battle constantly. We all know that doctors, as well as patients, differ in their personal qualities. That is why one patient may dislike this or that physician and have an abiding faith in another.

But what of the hopeless case? By far the majority of practitioners interrogated prefer not to tell the patient that nothing can be done for him. The hope eternal, that from every human heart must spring, must never be ruthlessly demolished. The hope which is shattered often makes the person more miserable than the original complaint. No matter how intelligent one may happen to be, there is a helpless feeling of impending doom to hear such a pronouncement from one who ought to know. However, some relative or friend should be told the facts, if he can be counted upon to cooperate intelligently.

SIEGFRIED BLOCK, M.D.

Brooklyn, N. Y.

*Abstract of a talk before the Pan American Medical Congress, Jan. 19, 1938.

The Seminar

"A Monthly Postgraduate Course"

★

(NOTE: Our readers are cordially invited to submit fully worked up problems to the Seminar and to take part in the discussion of any or all problems submitted.

Discussions should reach this office not later than the 5th of the month following the appearance of the problem.

Address all communications intended for this department to The Seminar, care CLINICAL MEDICINE AND SURGERY, Waukegan, Illinois.)

Problem No. 9 (Surgical)

Presented by Gustavus M. Blech, M.D., Chicago, Ill.

(See CLIN. MED. & SURG., Sept., 1938, page 442)

RECAPITULATION: A middle-aged man, apparently in good health, stooped to pick up an object from the sidewalk, and fell unconscious.

A young physician who was passing, on the basis of this scant information, told a policeman to call a hospital and direct that an ambulance be sent at once and have the operating room and a capable surgeon ready when the patient arrived. During the intervening time, artificial respiration was carried out continuously.

Requirements: 1.—What was the diagnosis? 2.—What operation did the young physician have in mind?

Discussion by E. C. Junger, M.D., Soldier, Ia.

This problem certainly is asking a lot without giving us the benefit of getting a look at this man lying unconscious on the sidewalk and not breathing. For the sake of the patient I hope his heart was on the job.

A middle-aged gentleman could be tall and slim, short and fat, anemic or plethoric; his skin dry or wet, pulse fast or slow, pupils wide open or contracted, and he might show numerous other symptoms and evidences that the young doctor could observe while the ambulance was on its way to pick him up.

If this man was full-blooded, he no doubt became dizzy on stooping over a full stomach, or one bloated with gas, or a belly full of fat. At middle age the skull is rather hard, but hardly solid enough to crack a cement walk.

I tentatively diagnose this case as a skull fracture or brain laceration, with resulting intracranial pressure from hemorrhage.

Discussion by M. Levine, M.D., Windsor, Ontario, Can.

The probable condition in this case was an acute, incomplete obstruction of the respiratory tract. This probably was caused by a foreign body lodging in the esophagus or in the trachea; the most likely foreign body being a partial dental plate.

The missing plate and the signs of partial asphyxia made the diagnosis clear. The only difficulty would be in deciding in which tube the teeth had lodged.

I hope that, during the time the doctor was waiting for the ambulance, he was also standing by ready to do a tracheotomy, as that seems to me to have been more indicated than artificial respiration.

Discussion by Angelo A. Barberio, M.D., Brooklyn, N. Y.

My diagnosis in this case is one of the following three:

1.—Perforation of a hollow viscus, probably the stomach.

2.—Acute pancreatitis.

3.—Mesenteric thrombosis.

The correct diagnosis can be made only at operation, as there is no past history.

Discussion by R. L. Gorrell, M.D., Clarion, Iowa

Without having any idea of the patient's physical appearance, any solution must be more or less of a guess, though we do have two facts to work upon: (1) a sudden loss of consciousness; and (2) failure of respiration, although this latter must be assumed, as the physician began to use artificial respiration.

Any sudden obstruction of respiration, such as that due to false teeth, would not

lead to immediate unconsciousness and the cause would be apparent.

The obvious conclusion would be that a central nerve lesion was the cause. The only brain lesion that gives good surgical results is a subdural hemorrhage, although, while Cushing was in his prime, he operated upon several cases of apoplexy successfully.

In other words, I freely admit that I can think of no diagnosis that would seem to fulfill the conditions herein furnished, and only wish that a few words had been used to describe the patient's pupils, color, and general appearance.

Solution by Dr. Blech

The young physician in the case happened to be familiar with Bruns' sign or symptom of *cysticercus disease of the fourth ventricle*. The moment he learned that the patient had been in good health, at least to all appearances according to his daughter's statement, and that he had lost consciousness on stooping down to pick up an object, he had no doubt that he was dealing with such a growth. This required immediate operation, and artificial respiration until the growth could be reached by operative intervention.

The remainder of the history of the case is simple. The surgeon confirmed the diagnosis of his young colleague and, after hasty preparation and without either anesthesia or even local analgesia, made a midline incision in the occiput (low), separated the muscles, and after a further nick with the scalpel the fluid in the cyst escaped under great pressure. At that moment the patient began to scream at the top of his voice, much to the joy of all men and women in the operating room. The cyst was removed in toto, it evidently having become detached by a simple pull, so that a bone flap became unnecessary. The patient made an uneventful recovery.

Comment: I have no personal knowledge of fatalities from this cause, but in talking this case over with some colleagues, two informed me that they knew of similar accidents among their own relatives; that is, that in the midst of apparent health, they stooped down, lost consciousness and, owing to the helplessness of the physicians who did not recognize the true condition, the patients died in a very short time. This justifies the publication of the case.

Comments by George B. Lake, M.D., Waukegan, Ill.

Although Dr. Blech states that there is no "catch" in this problem, most readers will disagree with him, because a diagnosis made upon the basis of the exceedingly meager information presented in this interesting *short story* would have no relation to the science or art of medicine, but would depend solely upon the recent reading of a description of some unusual diagnostic sign. Even so, without any real examination of the patient, the young physician merely made a grand-stand *guess* which, since it *happened* to be correct, probaby increased his professional reputation far more than he deserved.

Tapeworm (*Tenia solium*) is not especially common in this country, and cysticercus disease is decidedly rare; in the brain, probably *exceedingly* rare. No clear evidence is presented, in Dr. Blech's solution, that the two patients mentioned in the last paragraph died of this disease, as such evidence could have been obtained only at autopsy, which is not reported. The chances that any of our readers would encounter such a case, in a long lifetime of practice, are very slight.

We rarely publish a "trick" problem in the *Seminar*, but once in a while I feel that it is justifiable, especially when the story is written in an interesting narrative style. It gives our readers a chance to play a rather fascinating "guessing game," and thus show their knowledge and resourcefulness. One man's "guess" is as good as another's, and the scant discussion of a problem like this really shows good judgment. I wish that those who didn't like this problem would send in some better ones.

Problem No. 11 (Medical)*

Submitted by Frederick Taylor, B.S., M.D., F.A.C.P., High Point, North Carolina.

A 42-year-old parcel-post carrier, who had been unable to work for some time, came for examination on October 5, 1936, complaining of weakness in his legs. He had had influenza 4 years previously (confined to bed for 3 weeks), and had found it necessary to watch his diet carefully since that time. Distension of the abdomen and vomiting appeared after eating, especially after his morning and noon meals.

When first seen, he had vomited ½ to 1 hour after meals at least once daily, over a period of 18 months. There was never any blood in the vomitus. His weight remained fairly constant for a good while, but in the past four months he had lost 20 pounds. Weakness forced him to quit work 6 weeks ago. Since that time, he has lived on milk. He stopped vomiting as soon as he stopped work. On going back to work after eating, he would feel dizzy, as if he were drunk.

There were no visual disturbances, tin-

* Adapted from *South. Med. & Surg.*

Continued on page 549

Clinical Notes and Abstracts

★

Gonorrhea: Treatment with Hydrochloric Acid*

ATTRACTED BY THE REPORTS of Ferguson and his collaborators, I began the use of hydrochloric acid in gonorrhea about three years ago, and to date I and my associates have used many thousand injections of this drug, both intravenously (for the most part) and, when this route for various reasons has not been available, by intramuscular injection.

Every conceivable type of neisserian infection has been subjected to this treatment; male and female, adult and child alike have been subjected to its action; and in no case has there been a failure to achieve curative results. Moreover, there has never been an unfavorable reaction in our observation.

Some individuals show remarkably prompt response. Others seem to require a longer period of time to achieve cure. This does not always depend upon the type of disability, and thus may point to a new conception of our theories of resistance.

That the acid promotes an immediate response from the leukocytes can be easily demonstrated. Thousands of comparative counts have been performed and uniformity easily demonstrated.

In acute, uncomplicated gonorrhea, the initial intravenous injection is 10 cc., in a dilution of 1:500 HCl in distilled water. This is repeated daily for about ten consecutive days, when the clinical symptoms are generally such that the interval between injections may be lengthened to two or three days for the period necessary to establish a proved cure.

In subacute, or complicated, cases of gonorrhea, including all complications, regardless of type or sex, the injections are used at two-day intervals until improvement begins, and then the periods are lengthened.

The most impressive feature in connection with this form of therapy is the quick response of the subjective symptoms in the patient, combined with a feeling of general bodily stimulation of which these patients so frequently speak. Strangury, urinary distress, and like symptoms disappear with remarkable rapidity, and it is no unusual experience at our hands to see copious discharges lessen within forty-eight hours.

In some of the sub-acute cases, we use a urethral soak of 1:1000 HCl, clamped in the urethra for several minutes. In prostatic complications, very cautious massage for diagnostic purposes is adopted, and the high-frequency vacuum electrode is added to the treatment schedule for its local hyperemic effect. This added form of treatment is especially valuable in pelvic complications in women, and has produced most happy effects in our hands.

Diagnosis in our cases is confirmed by the accepted and orthodox methods. All cases are given a Wassermann and a Kahn test upon admission to our clinic. Criteria of cure depend upon an adequate period of observation after all treatment is discontinued, and the beer test, a condom specimen, and repeated examination of any morning drop are made. In the female, three examinations of all or any cervical secretions must be negative following the menstrual periods, after all treatment has been suspended. Complement fixation tests have not been made in our series of cases, because of the unreliability of the results so far obtained with this procedure.

For those unskilled in intravenous methods, an intramuscular injection of HCl may be used, giving a 2 cc. injection of a 2-percent solution of HCl in sterile water, with a 1-percent addition of Butyn, this making an almost painless procedure when the injection is given in the upper outer quadrant of the buttock with a keen needle of sufficient length to reach the belly of the muscle.

CHAS. E. VERDIER, M.D.
New Orleans, La.

*The Military Surgeon, Aug., 1938.

Funnel Pelvis

ONE of the nightmares of our obstetrical training was that dreaded spectre, the funnel pelvis. Classically, the funnel pelvis presented an inlet ample enough to allow the head to descend and an outlet so contracted that normal delivery was impossible.

After delivering several hundred cases and studying measurements of a large series, the conclusion is forced on one that the true funnel pelvis is a rarity, and that the old obstetric axiom, "If the head will enter the pelvis, it can be delivered naturally," is sound.

Careful roentgen-ray examinations of the pelves in pregnant women failed to reveal a single case of true outlet contraction (Moloy[1]). Absolute outlet contraction occurred chiefly in small, android types, but rarely presented difficulty, because the inlet also was abnormal and the head failed to engage.

Claude E. Heaton[2], in a clinical evaluation of pelvioradiography, as applied to 300 potentially difficult deliveries, comes to the conclusion that many cases of prolonged labor occur despite ample pelves, and that a much more common type of funnel pelvis is that in which the sidewalls of the pelvis converge and the sacrum is placed far into the pelvic cavity. This latter type of bony architecture resulted in 35 percent stillbirths.

R. L. GORRELL, M.D.

Clarion, Ia.

Pulmonary Fibrosis and Emphysema

WE BELIEVE that pulmonary fibrosis and emphysema represent a chronic decompensation of the function of the lungs. *This is manifested clinically by dyspnea*, which is the outstanding symptom of the decompensation syndrome.

In pulmonary fibrosis there is a permanent loss of functioning lung units, due to failure of the intrinsic self-cleansing function, and in emphysema there occurs an irreversible loss of retraction power in the compensating lung units where the available spaces are merely overstretched by the operation of extrinsic breathing.

Attacks of acute pulmonary decompensation **occur as fibrosis and emphysema become more advanced. These take the form of acute dyspnea, cyanosis, and pulmonary edema. Finally all cases arrive at the stage of acute pulmonary edema, which has usually been interpreted to mean cardiac failure. The patient dies of acute *pulmonary* failure.—J. A. MILLER, M.D., and I. RAPPAPORT, M.D., in *Ann. Int. Med.*, Mar., 1938.**

1.—Moloy, H. C.: *Am. J. Roentgenol.*, 30:111, 1933.
2.—Heaton, C. E.: *N.Y.S.J.M.*, 38, 83 (Jan. 15), 1938.

Oxygen in Pneumonia

IF OXYGEN IS TO BE USED in the treatment of pneumonia, it should not be reserved for a "farewell gesture," but rather used throughout the course of the illness. Instead of waiting for cyanosis to develop before oxygen is begun, employ the gas to *prevent* the development of anoxemia and its harmful effects upon the heart of the patient.

It has recently been shown that soda lime (formerly much used to absorb the carbon dioxide breathed out by the patient) is not necessary, and thus two dollars are saved each thirty hours. It is now felt that a small percentage of carbon dioxide is not harmful to the patient.

Adequate oxygen treatment should consist of at least 70 hours of such therapy. **When so used, the mortality will be cut almost in half.—G. H. FAGET, M.D., in *Ann. Int. Med.*, July, 1938.**

Serum Therapy of Pneumonia*

TYPE I pneumonia serum is so effective, when administered early and in large doses, that if the patient does not improve one should suspect a mistake in typing or a complication, such as empyema.

Even with large doses, the results from the administration of Type II serum are not so spectacular, but a definite lowering of mortality rate (20 percent) is obtained.

The emphasis in the future diagnosis of pneumonia must rest on history, symptoms, and faint physical signs. *Most of the technic of diagnosis, including the use of roentgenograms, as ordinarily practiced and taught, is inadequate for early diagnosis and to recognize complications.*

I do not desensitize the patient but do test for sensitivity. In doubtful cases, I give a small dose, intravenously, and take the blood pressure at short intervals. A drop in pressure presages dangerous shock. Twenty thousand (20,000) units are given as a first dose; then 60,000 or 80,000 units within one or two hours.

For early recognition of the disease, the history is more important than the physical findings. The most important physical sign is the crepitant râle. In doubtful cases, a lung puncture may be done, and

* *J. A. M. A.*, Oct. 1, 1938.

a small amount of serum removed and examined bacteriologically.

It must be kept in mind that failure to respond to specific serum therapy may indicate a complication, notably empyema. There is no advantage in giving more than 300,000 units, if improvement has not occurred.

M. A. BLANKENHORN, M.D.
Cincinnati, Ohio.

Where to Find Vitamin A

THE OUTER GREEN LEAVES of iceberg lettuce, which are usually removed before the head is offered for sale, have been shown to be from thirty to forty times as rich in vitamin A as the inner white leaves.

Thin green leaves are among the best sources of vitamin A; the greener the leaf, the greater the content of vitamin A. The yellow color of carotene also indicates a high vitamin A content (sweet potato, carrots, apricots, yellow peaches, bananas).

Eggs, whole milk, and milk products are good sources of vitamin A.

Vitamin A is destroyed by oxidation; foods containing it *should not be heated for long periods*, although boiling for a short time is not harmful.—H. E. MUNSELL, Ph.D., in *J.A.M.A.*, July 16, 1938.

Treatment of Acute Cervicitis*

THE PATIENT with acute cervicitis must abstain from intercourse. One of the following methods of treatment is carried out:

1.—The vagina is gently cleaned out with warm tap water and sponged dry with cotton; one or two ounces of sieved corn starch are blown into the vagina with a male asepto syringe, and left in the vagina for two or three days; the patient takes a warm-water douche before returning to the office; the vagina is dried and two ounces of corn starch are again blown in. The cervicitis will usually clear up after the treatment is carried out two or three times.

2.—The vagina is cleaned out and from four to six glucose-lactose (Floraquin) tablets are inserted in the posterior fornix, or Floraquin powder is blown into the vagina two or three times weekly. The patient inserts one tablet two or three times daily, without douching, for six days. A vinegar douche (four tablespoonfuls of vinegar or five percent acetic acid in two quarts of warm water) is then used twice daily.

Warm vinegar douches may be used two or three times daily until the cervicitis becomes chronic. Conization, coagulation, or cauterization may be used in the treatment of chronic cervicitis, erosions, ectropions, and eversions of the cervix.

KARL JOHN KARNAKY, M.D.
Houston, Texas.

*Rad. Rev., July, 1938.

Relief of Pain by Lipiodol Injections

THE INJECTION of 8 to 10 cc. of warmed lipiodol into the epidural space gives marked relief in sciatica and intractable lumbosacral, sacro-iliac, and lumbar pain. The injections should be made with a small syringe having a wide flange, so that great pressure can be used to expel the oil. A 19-gage needle should be used. A preliminary injection of Novocain is administered, using the technic of epidural anesthesia. Injections of lipiodol may cure painful areas in muscles, joint capsules, and ligaments. The injection is made directly into the painful region.—GEORGE BATTALORA, M.D., in *N. O. Med. & Surg. J.*, Mar., 1938.

Anti-Syphilitic Therapy*

THE AGE OF THE PATIENT is the most important factor in the treatment of syphilis. If a therapeutic paradox is to be avoided, in which the disease is cured but the patient is killed, we must consider the tolerance of the individual, as age brings on retrogressive changes which repair slowly. Blood vessels and visceral tissues alike must bear the brunt of too vigorous therapy.

Next to the age of the patient, the stage of the disease itself is of the utmost importance. It is folly to hope to cure a deeply entrenched, late syphilitic infection which shows marked visceral destruction, but at least these patients may be prevented from becoming worse and kept comfortable. Then too, late central nervous system and visceral sequelae can be prevented.

These are the *contraindications to arsenical therapy:* (1) Marked vascular involvement of the brain, diffuse encephalitis, or myelitis; (2) hepatitis and cirrhosis of the liver; (3) chronic myocarditis, coronary lesions, and aneurysms; (4) chronic nephritis; (5) acute advanced tuberculosis; (6) hyperthyroidism; (7) allergic dermatitis and exfoliative dermatoses; and (8) cirrhotic splenomegaly.

Reactions: Many of the reactions to arsenical therapy may be avoided by asking the patient concerning a mild reaction after the previous injection. Pruritus, or even

*New Orleans M. & S. J., July, 1938.

erythema, of the areas where the skin surfaces rub together, as in the axilla, is often a prodromal sign of arsenical intolerance or saturation, just as the burning along the course of a vein, when the solution has not been injected outside of the vein, often indicates an approaching nitritoid crisis. *If a preliminary injection of bismuth or mercury is given before arsenical therapy is started, many serious complications may be avoided.*

Bismuth reactions are not so severe as are those produced by the arsenicals. They are: (1) stomatitis; (2) fever; (3) gastro-intestinal upsets; (4) bizarre cutaneous eruptions; (5) nephritis; (6) nervous system reactions; and (7) blood dyscrasias. Before beginning bismuth therapy, the condition of the mouth, the gastro-intestinal tract, and the kidneys must be definitely ascertained. The water-soluble bismuth preparations are much less painful than the oil-soluble, but are more toxic, because they are absorbed more rapidly.

J. K. Howles, M.D.

New Orleans, La.

The General Practitioner and Diphtheria

Diagnosis: The early case of diphtheria may present only a moderately red and swollen soft palate and tonsils. A veil-like covering or a few white spots may be present. The *submaxillary lymph nodes are more swollen and tender* than the appearance of the throat would seem to justify. *Fever is slight*, in the early stages. Within from twelve to twenty-four hours, a creamy-white covering coats the tonsils and soft palate, and constitutional symptoms appear (marked malaise especially). Laryngeal diphtheria usually is evidenced by obstruction to breathing, croupy cough, and a change in the voice; nasal diphtheria results in profuse nasal discharge, which is very frequently bloody. Constitutional symptoms are more severe in nasal diphtheria patients, as there is a large amount of surface for absorption of toxins.

Treatment: Antitoxin must be given *intramuscularly* or *intravenously*, to ensure rapid absorption. In early mild or moderately severe cases, give from 20 to 40 thousand units. Forty (40) to 80 thousand units may be administered if the patient is seen later in the course of the disease or if the disease is more severe. One-half of the amount may be injected into a vein, and the remainder deep into the gluteal muscles.

Allergic reactions may be obviated by combining the serum with 500 cc. of 10-percent dextrose solution, to which has been added 6 minims of Adrenalin (epinephrin) chloride 1:1,000, and administering the combination slowly. Rest in bed must be insisted upon for at least fourteen days, as even in the mildest cases some myocardial injury results. Diet should be semi-liquid; a generous sugar intake should be provided.—E. R. Carlo, M.D., in *J. Ind. S.M.A.*, Apr., 1938.

Insulin in Acute Alcoholic Psychoses*

The control of withdrawal symptoms in alcoholism, and the treatment of complications which so often appear, have always been difficult problems.

Extreme nervousness may be controlled with various hypnotic drugs, but when administered in sufficient amounts to produce the required results, these drugs are toxic to the individual under treatment. This toxic reaction aggravates and prolongs the symptoms and, in many cases, superimposes an additional addiction upon the alcoholism.

Sakel pointed out, in 1930, that insulin in large doses would control the withdrawal symptoms in the treatment of morphine addiction. This has been confirmed many times. Since the two conditions are closely related, this use of insulin led me to believe it might be effective in controlling the withdrawal symptoms of alcoholism, and I have found it highly successful.

Uncomplicated cases responded to the following technic: Twenty (20) units of insulin are given subcutaneously immediately upon admission. During the next three hours, the patient is urged to drink all the orange juice that can be forced. The second injection of 20 units is given three hours after the first. The minimum requirement of orange juice to prevent reaction from the second dose seems to be at least thirty ounces.

Ordinarily, the first dose will have no effect upon the patient other than to produce hunger and, from that, cooperation in the taking of fluids and nourishment. The mental symptoms usually are not improved until after the second injection of insulin. One-half hour to an hour following the second dose, the patient begins to quiet down, and soon falls into a deep sleep, from which he awakens clear. The psychosis may or may not return following this sleep.

A small dose of insulin is given shortly after the patient awakes, and thereafter no more insulin is used unless the psychosis returns or the patient is not completely

*J. Kansas City M.S., Nov., 1937.

clear. If further injection of insulin is thus indicated, at least four hours should elapse between the awakening and the resuming of treatment. During this four-hour period, carbohydrates are forced by every possible means, and the above routine of administering insulin is repeated at the end of this period. In all uncomplicated cases the patient should be clear following the second series of insulin injections. If he is not, then we assume that there is some complication, inflammatory or otherwise, which is delaying results. Six (6) of our 9 cases responded perfectly according to the above technic, when sufficient treatment was given. The other three were complicated, two with an upper respiratory infection, the other with syphilis.

The average length of time from admission to complete resolution of symptoms under this treatment is 3.3 days, and the average length of time of resolution from the time of beginning proper therapy is 1.3 days.

Lowering of the blood sugar is of no importance, as results are obtained regardless of the amount of the blood sugar.

With proper care and supervision, no complications should be expected from this type of treatment, and it is possible that this method should replace former methods which lend themselves to frequent complications.

General diseases complicating the chief complaint will postpone recovery under this treatment, as they will under any other method.

G. WILSE ROBINSON, M.D.
Kansas City, Mo.

The Sinusitis Headache*

HEADACHE IS ONE of the cardinal symptoms of frontal sinusitis. *It may be entirely absent* or so severe that the patient threatens dire things if not relieved. In an ordinary case, the first head discomfort is felt when the head is lowered, as in stooping, the feeling being described, "as if something heavy and painful wants to fall out." A sensation of fullness or bursting may be felt in the same region when the patient coughs or strains.

The headache has one characteristic that is helpful in differentiating it from a neuritic headache, especially that resulting from supraorbital neuritis. The patient will state that the pain begins at a stated time, increases in severity to a maximum, then gradually lessens and disappears several hours later, at almost the identical time each day. During the course of the headache, tenderness over the frontal sinus may be very great, so much so that the outline of the sinus may be demonstrated by light percussion.

Photophobia may be complained of and the conjunctivae may be injected. Edema, due to osteitis, may appear, especially in the upper lid and frontal area.

The pain of an infected maxillary sinus is felt in the region of the sinus or in the upper teeth. Edema of the side of the face and lower lid may occur. Careful x-ray examination should be carried out at once, to rule out periostitis resulting from an infected tooth, in order that proper treatment may be instituted.

The pain of acute infections of the ethmoid and sphenoid sinuses may be located behind the eyes or in the occiput or behind the mastoid process; tenderness may also be present.

FRANCIS WHITE, M.D.
New York City.

*N.Y.S.J.M., July 1, 1938.

Treatment of Sterility

USUALLY THERE ARE three or four factors that should be treated after the husband's spermatozoa have been found normal. Frequently, a simple insufflation at the office, the insertion of a pessary to correct a displacement, dilatation of the cervical canal, or cauterization of a mild erosion, separately or in combination, will conquer a sterility of many years' duration.

It has been my experience that, even in more or less exaggerated cases of anteflexion, where an actual mechanical obstruction exists, regular dilatations at the office and occasional insufflations, at about the eighth or tenth day after the beginning of menstruation, will be productive of success, if all other factors have been eliminated and the mechanical obstacle is the primary cause of sterility.—HILLIARD E. MILLER, M.D., in *South. M. J.*, Sept., 1938.

Dietetic Treatment of Skin Diseases

PSORIASIS is apparently due to a disturbance of fat metabolism. A fat-poor diet is recommended, with a total fat intake per day not exceeding 20 gm. for adults and 10 gm. for children.

Many pruritic skin diseases are caused by, or accompanied by, acidosis. Urticaria, prurigo, erythrodermia, and psoriasis are often associated with acidosis. Acid-forming foods (starchy foods, bread, meats) should be forbidden and alkalies given orally.

Pyodermia, mycoses, folliculitis, furuncu-

losis, pruritus (especially of the anus and vulva), chronic recurrent eczema, urticaria, and dermatitis intertriginosa are often associated with disturbed carbohydrate metabolism.—A. MARCHIONINI, M.D., in *Med. Welt.*, Feb. 26, 1938.

The Electrocardiograph Cannot Make a Diagnosis

IT IS to be remembered that clinical electrocardiography is, in any instance, but an adjunct to diagnosis. *No wave change is specific for any disease.* The changes can be interpreted properly only by intelligently relating them to the actual clinical status of the patient from whom the record is taken.

Such great emphasis has been centered on the T-wave changes in patients past middle age with diseased coronary arteries, that a non-critical physician may feel that these abnormal waves belong exclusively to the patient carrying an infarct in the heart muscle. *Yet T-wave inversions may occur in a number of clinical situations ranging from essential hypertension through mushroom poisoning and acute tonsillitis to a structurally normal heart with the patient in severe shock.*—L. C. MCGEE, M.D., Ph.D., in *South. M. J.*, May, 1938.

Toxic Complications of Diphtheria*

CHILDREN WHO SUCCUMB to diphtheria die from two causes: (1) suffocation following the membrane formation in the larynx or lungs; or (2) the effects of the diphtheria toxin on the organs of the body.

Diphtheria is a slow poison, which requires several weeks to produce all of its effects. An adequate dose of antitoxin neutralizes any toxin then in circulation, but does not counteract any toxin already fixed in the tissues.

The kidney, heart, and nervous system, are the chief organs affected by the diphtheria toxin. The kidney involvement is in the form of *nephrosis,* not nephritis, may be accompanied by hematuria as a result of emboli lodged in the kidney, and disappears with the diphtheria.

Cardiac failure is the most common cause of death in diphtheritic patients. It follows the acute degenerative myocarditis of diphtheria. The symptoms of heart failure (weakness, cyanosis, weak, fast pulse) appear on the fifth to the seventh day, reach a peak on the twelfth day, and usually subside rapidly. *There is absolute restoration of the heart to normal,* if the first two weeks are survived. The patient must be kept quiet in bed for two weeks.

Diphtheritic paralyses always follow a regular course, in this order: soft palate paralysis; ciliary muscle paralysis; weakness of all muscles and loss of tendon reflexes, which may progress until the respiratory muscles, cervical muscles, tongue muscles, and leg muscles are paralyzed. Strychnine is the best supportive treatment for this complication. Muscle power is recovered completely.

R. A. CRAIG, M.D.

Indianapolis, Ind.

J. Ind. S. M. A., Apr., 1938.

Prostatism

THIRTY-FIVE PERCENT of all men over 35 years of age have prostate trouble, and eighty percent of low backache in men is due to infections of the prostate and seminal vesicles. A soft and boggy or small and firm prostate gland is suspicious. The failure to obtain secretion indicates either that a proper examination and massage were not performed or that no disease is present.

A diagnosis of "normal prostate" should not be made until at least three massages are negative, in cases of undiagnosed low backache. The stripping must be thorough but not brutal, and unless thick seminal vesicle mucus is obtained, the procedure is incomplete. Microscopically, the secretion from an injected prostate shows pus, a diminution of lecithin, and an increase in the amount of fine hyalin granules, degenerated cells, and debris. Spermatozoa which lack motility indicate a toxic condition.—M. B. WESSON, M.D., in *Urol. & Cut. Rev.*, Mar., 1938.

Pneumoperitoneum in Pulmonary Tuberculosis*

THE INDICATIONS FOR artificial pneumoperitoneum in the treatment of pulmonary tuberculosis are: (1) If artificial pneumothorax is indicated but cannot be established (in unilateral cases, better results are obtained by combining this method with phrenic nerve block); (2) *severe pulmonary hemorrhage* that cannot be controlled by any other means; (3) following pregnancy in cases of tuberculosis in which pneumothorax cannot be induced; (4) if the elevation of the diaphragm is insufficient after phrenic nerve block; (5) a large tuberculous lesion, which is too extensive to be

* *Dis. Chest,* Sept., 1938.

treated by bilateral pneumothorax; (6) bilateral pulmonary tuberculosis, complicated by intestinal or peritoneal tuberculous lesions; (7) pulmonary tuberculosis complicated by basal bronchiectasis.

Technic: The injection may be made at the left lateral border of the rectus muscle, either just under the costal margin or three inches below the umbilicus. The skin is sterilized; 4 cc. of 2-percent Novocain (procaine) solution is injected into the abdominal wall; a 19-gage needle, 1½ inches in length, is introduced at a slight angle; and 200 cc. of air (or oxygen) are introduced. At four-day intervals, injections are given in increasing amounts until 800 to 1500 cc. are being given.

The patient should understand that there will be discomfort. Elevation of the hips and lowering of the head will relieve distress.

A. WORTH HOBBY, M.D.

Atlanta, Georgia.

Intravenous Treatment of Peptic Ulcer*

WE HAVE TREATED a large number of cases of peptic ulcer with buffered citrate solution (20 cc. two or three times weekly), given by the intravenous route. Twenty-four (24) injections constitute the average course of treatment. Other than a pleasant tingling sensation in the tongue and lips, no reaction follows its administration. Hemorrhage is not a contraindication. The injections should be given daily in severe or hemorrhagic cases. Improvement is generally noted following from 3 to 6 injections.

We believe that vascular disturbances (capillary stasis or venofibrosis) are the chief cause of peptic ulcer, and base the use of buffered citrate solution on this theory.

L. J. SCHULTZ, M.D., and
L. S. HOUSE, M.D.

New York City.

*Med. Rec., Nov. 3, 1937.

Acidosis

AN EASY WAY to determine the concentration of buffer salts in the body is to determine the *pH* of *fresh* feces, taken immediately after their passage. Fresh feces can be obtained in the office, after an injection of pitressin has been given to the patient.

Litmus paper, made up at a *pH* of 7.2 (neutral), is extremely sensitive. It is only necessary to bring the litmus paper into contact with the feces and read the reaction on the opposite side. If the reaction is acid or alkaline, the buffering mechanism is unbalanced and buffer salts should be given. If all of the normal buffer salts are administered, in their relative concentrations as in blood, the normal physiologic relationships are reestablished.—A. W. OELGOETZ, M.D., in *Am. J. Dig. Dis.*, July, 1938.

A New Treatment of Acute Poliomyelitis*

THIS NEW SYSTEM OF TREATMENT of anterior poliomyelitis has produced such *startling results* that we must revise our views as to the degree of recovery possible. In twenty years' use of Sister Kenny's treatment, there has not been one instance of trophic change or deformity.

In contrast to the orthodox methods of rest, splinting, and later massage, the view is taken that the pain in the extremities is almost completely vascular in origin and that it may be relieved by frequent passive movements, hydrotherapy, and fomentations. A rapid alternation of hot and cold sprays re-establishes capillary tone, whereas massage merely squeezes blood from one set of dilated capillaries to another. Within ten minutes after the sprays are begun, the limbs become suffused with pink color.

The usual lumbar puncture, sedatives, and convalescent serum administration, are performed. The patient lies flat on the back, with a very low pillow and a small towel between the shoulders to prevent winging of the scapulae. The elbows are supported by towels, so that the weight of the humerus does not stretch the shoulder girdle muscles. The legs are placed together and foot-blocks used, so that foot-drop and external rotation do not occur. If possible, all the bed clothes are kept off the patient by a cradle, and the air is kept artificially warmed. Every two hours, applications of moist heat or short-wave diathermy are made to the painful muscles. After that the limbs are passively moved through the full range of each joint, three times. This procedure may cause pain at first, but this soon disappears.

The limbs should be kept in proper position during the night, and replaced if they fall out of place. If such moving causes pain, fomentations and manipulations are carried out during the night. Under this treatment, a sick child is converted into a contented and cooperative individual within three days.

Once daily an attempt is made to have the patient actively use the paralyzed mus-

*Br. M. J., Jan., 22, 1938.

cles. The limb is grasped just below the insertion of the paralyzed muscle, and the patient is asked to make the movement. The patient focuses all his attention on the muscle, and the attendant slowly performs the movement passively. Within a few days, a faint change will be noted by the assistant, which represents the finest movement possible. As the impulse strengthens, active attempts must be made twice daily, increasing gradually up to six times daily. The assisted movements are done at first in the bath under water, because the water gives the patient greater mental consciousness of the position of the limbs.

Once each day, in the early stages, the patient is taken out of bed and the feet placed on the ground. A few days later, a little weight is allowed on the feet and, as muscle power returns, more and more weight is allowed for short periods (for full details, consult Elizabeth Kenny's "Infantile Paralysis" 1937, Angus and Robertson, Ltd., Sydney, Australia).

Fatique must be avoided. An impulse must not be elicited more than once daily for several days, or it will disappear for weeks.

Under orthodox treatment, the limbs suffer from acute anoxia, which leads to spasm in unaffected muscles and stiffness of joints and fasciae. Splinting prevents major deformities, but predisposes to minor deformities and joint stiffness.

F. H. Mills, M.B., B.S.

Sydney, Australia.

Exact Diagnosis of Menstrual Dysfunction*

Normal menstruation should occur at regular intervals, of approximately 28 days; last from four to six days, with a moderate amount of flow; and be practically painless. A woman may be considered normal who becomes pregnant without an undue lapse of time following marriage.

In each case of menstrual disorder, a specimen of the endometrium was obtained by the use of a very small, sharp curette, which could be introduced through the cervix without dilatation. Occasionally, slight dilatation with the smallest Jolly dilator was necessary. No anesthetic, local or otherwise, was used. The curette was introduced gently through the cervix, carried to the fundus, and brought down to the cervix in the positions of 12, 3, 6 and 9 o'clock. With proper gentleness, the complaint of cramping pain is minimal. The specimen is obtained immediately before a menstrual period. When uterine bleeding is continuous, it may be taken at any time.

Careful, experienced pathologists can estimate the glandular deficiency of the pituitary or corpus luteum by studying these specimens, and appropriate treatment may then be undertaken by the physician.

Lyman W. Mason, M.D.
W. C. Black, M.D.
R. G. Gustavson, Ph.D.

Denver, Colo.

*Am. J. Obst. & Gyn., Feb., 1938.

Sulfanilamide Facts*

Sulfanilamide is readily and completely absorbed by the gastro-intestinal tract of the human being and circulates in the blood and other tissues almost wholly as such. Marshall and his associates found that, in the human subject after a single dose of 60 grains (4 Gm.), the maximum concentration is reached in from 1 to 4 hours, the average being 2 hours. In patients with normal kidneys, practically no sulfanilamide can be found in the blood after 24 hours.

The toxicity for man seems to be greater than has thus far been reported for animals. Fatal agranulocytosis has occurred in four cases following sulfanilamide administration; severe hemolytic anemia which required transfusions has appeared in a fair number of cases; collapse, jaundice, leukopenia, tachycardia, cyanosis, vertigo, tinnitus, malaise, nausea, and headache are other signs and symptoms of sulfanilamide poisoning.

Aminopyrine and salicylates, especially Aspirin (acetosal), when taken with sulfanilamide, may result in severe poisoning. *No other medication of any kind should be given to those receiving sulfanilamide, except sodium bicarbonate.* The drug should not be given to ambulatory patients whose duties require a clear intellect, as for example, automobile drivers.

G. B. Roth, M.D.

Washington, D.C.

Breast Carcinoma

There are some lesions in the breast in which it is difficult for any surgeon or pathologist to state positively whether the condition is malignant or benign. Hence, the surgeon must not assume that by obtaining a microscopic diagnosis he has secured positive information. In such cases the clinical data, age of the patient, extent and duration of the disease, condition of the lymph nodes, and especially the gross character of

*Med. Ann. Dist. Col., June, 1938.

the lesion, should be given much importance in the decision.

Under these circumstances, some surgeons would err on the side of caution and perform the radical operation. I believe it is unfair to the patient to perform a radical mastectomy unless the diagnosis of carcinoma is positive. There are many precancerous and suspicious lesions in the breast which are clinically benign, while a true carcinoma is nearly always obvious to a pathologist of adequate experience. When a substantial doubt exists about the nature of a microscopic section of a breast tumor, it is generally *not* cancer.—Edit. from *Radiology*, Feb., 1938.

Male Hormone and Descent of Testes

BY INJECTIONS of testosterone propionate, the cryptorchid testes of immature monkeys descended into the scrotum. There was less edema and scrotal swelling than in descent produced by gonadotropic hormone injections.

Endocrine treatment is of value in (1) producing descent in certain cryptorchid patients; (2) authorizing surgery at an early age, instead of waiting until puberty to see whether spontaneous descent may occur; and (3) aiding surgery preoperatively, by the development of structures of the cord, and postoperatively, by preventing retraction and tension.—J. B. HAMILTON, M.D., in *Anat. Rec.*, April, 1938.

[This recent research may extend the use of the male hormones, which are now commercially available, and replace the injections of anterior-pituitary-like hormone, which is objected to by certain endocrinologists for this purpose.—ED]

Ulnar Neuritis Secondary to Injury

ULNAR NEURITIS MAY OCCUR as a sequel of a contusion, lower humeral fractures, elbow dislocations, and other injuries about the elbow. Often there is a lapse of many years between the injury and the onset of the neuritis, so that it is easy for the physician to forget an event that occurred from 2 to 32 years previously, in his evaluation of the causes of the neuritis. It is treated by freeing of the ulnar nerve from behind the medial epicondyle and transplantation anteriorly, to shorten its course.

The symptoms are: claw hand, weakness of the wrist, weakness of flexion of the small and ring fingers, atrophy of the thenar and hypothenar eminences, anesthesia of the inner side of the dorsum of the wrist and of the palm, and atrophy of the skin.—J. REGAN, M.D., in *Am. J. Surg.*, Sept., 1938.

The Seminar

Continued from page 540

nitus, nor other type of vertigo; no blood in the bowel movement; no dyspnea, cough, or edema; no sore throat; no backache or urinary symptoms. His feet and fingers began to feel numb several months ago, and now both legs are numb, also.

Past history: He had scarlet fever at age 4, and infantile paralysis in childhood, which affected his arms and legs, but which cleared up completely. Attacks of influenza were suffered in 1918, and again 4 years before this examination. His family history was not informative.

Physical examination: Height, 5 feet 6 inches; weight, 141 pounds; temperature, 98°F.; pulse, 80; respirations, 16; blood pressure, 130/80.

All his teeth had been studied roentgenologically and pronounced healthy. There were no pathologic findings in the head, neck, or chest. His abdomen showed a slightly tender spot two inches below the umbilicus, but was otherwise normal. The genitals and rectum appeared normal.

Neurologic examination: His knee-jerks were four plus, bilaterally; there was no ankle clonus nor positive Babinski sign; the biceps reflexes were four plus on each side; the cranial nerve reflexes were normal; the tongue did not appear abnormal; the feet were slightly hypesthetic to light touch. On attempting the Romberg test, the patient tended to fall to the right. The grip was normal in both hands; perception of objects (stereognosis) was normal; and there was no adiadokokinesis.

A recent blood Wassermann test was reported negative. Repeated urinalyses showed nothing pathologic. When his stomach was at its worst, his tongue became raw and red. The blood count, made one year previously showed: hemoglobin, 91 percent; red blood cell count, 5,480,000; leukocyte count, 6,400. At the time of my examination, the hemoglobin was 95 percent; the red cell count 4,010,000; and the leukocyte cell count 8,000. A fractional gastric analysis showed no free hydrochloric acid, no blood, and no bile.

Requirements: Suggest your tentative diagnosis and treatment, *giving reasons*. What, if any, further information would you require to make a positive diagnosis?

Diagnostic Pointers

★

Pain About the Head

• Reflex neuralgia may be produced by pressure on the auriculo-temporal nerve as it passes the mandibular joint (temporomandibular joint or articulation of the jaw with the head), *due to removal of teeth from the upper or lower jaw.* The pain may be felt about the ear, along the vertex, about the eye, and along the border of the tongue throughout the area supplied by the lingual nerve. Burning of the tongue follows, and the patient lives in dread of cancer. Relief is obtained by proper bridgework or other devices which restore the occlusion of the jaws.—E. C. ERNST, M.D., and J. B. COSTEN, M.D., in *Radiol.*, Jan., 1938.

Diagnosing Heart Disease

• Never diagnose heart disease solely on the strength of a murmur (unless it is diastolic) or palpitation.

A diagnosis of heart disease, it must be remembered, is a fear-inspiring pronouncement. It carries with it a rather definite, sinister, and ominous prophecy that the outcome is inevitably heart failure. The failure of the heart, preventable in some cases, can, by careful treatment, be postponed for years.—G. R. HERRMANN, M.D., in "Diseases of the Heart" (C. V. Mosby Co.).

Syphilis As a Disease of the Throat

• Syphilis has been looked upon as a skin disease, taught as a skin disease, but never thought of as a throat disease. Syphilis remains in the throat and mouth long after it has disappeared elsewhere. A chancre, a mucous patch, superficial and deep ulcers, all label themselves as syphilis. The Wassermann test may not always be positive. The diagnosis is substantiated by the rapid improvement under treatment.—E. H. GRIFFIN, M.D., in *Med. Rec.*, July 30, 1938.

Jaundice As a Symptom of Renal Stones

• Jaundice may be a predominating symptom of nephrolithiasis. It may often be differentiated by a careful history. The pain of gallbladder stone usually begins in the right upper quadrant and radiates toward the umbilicus, whereas the pain of renal stone begins in the back and radiates down toward the genitalia. Jaundice due to an obstructing renal stone should be recognized as early as possible, so that surgery can be instituted before kidney and liver damage ensue.—L. C. JACOBS, M.D., and A. EPSTEEN, M.D., in *Urol. & Cut. Rev.*, July, 1938.

Flatulence

• For reasons yet unknown, some persons swallow much air as they drink. A "dry" dinner will sometimes give a much more comfortable night.

Other common causes are: Food sensitiveness, a fecal plug in the rectum, nervous excitement, laxatives, oil, and the many substances now prescribed for the adding of bulk to the stools.—W. C. ALVAREZ, M.D., in *Ohio S. M. J.*, Oct., 1937.

Blood Pressure and Heart Failure

• The height of the blood pressure gives no definite information with regard to the strength of the myocardium. A diastolic pressure over 100 usually indicates myocardial weakness. *Do not treat high blood pressure,* treat the *patient,* as a decrease in the pressure may result in poorer nutrition to the heart and accentuation of anginal or coronary symptoms.—ROBERT WILSON, M.D., in *South. M. & S.*, Jan., 1938.

Abdominal Cramps

• A patient who presents crampy abdominal pain and nausea should be suspected of having an early intestinal obstruction. A hernia or previous abdominal operation may indicate the cause and location.—E. V. MASTIN, M.D., F.A.C.S., in *Rad. Rev. & M. V. M. J.*, Jan., 1938.

Vaginal Bleeding

• When a woman in the child-bearing age is bleeding vaginally (not at a typical menstrual period) and has pelvic pain, pregnancy, either uterine or ectopic, should always be considered. If the pain is more intense on one side, the diagnosis points more to ectopic pregnancy than to threatened abortion.—RICHARD TORPIN, M.D., in *South. M. J.*, Mar., 1938.

Thumbnail Therapeutics

★

Protection Against Diphtheria and Tetanus

• Children may now be immunized against both diphtheria and tetanus at the same time, by the use of a combined toxoid. As over half of the deaths from tetanus occur in children, such prophylactic therapy is of the greatest value. The injection of tetanus antitoxin or toxoid later, after suffering a badly contaminated wound, raises the protective antibodies against tetanus to a very high level.—JEAN V. COOKE, M.D., in *South. M. J.*, Feb., 1938.

The Value of "Cold" Vaccine

• Bristol, in treating some 19,000 individuals with stock vaccines or serobacterins, found an apparent reduction in the severity, duration, and complications of acute upper respiratory diseases, but no reduction in their incidence.—J. S. MCQUISTON, M.D., in *J. Iowa S. M. S.*, June, 1938.

Immunizing Children

• All children should receive prophylactic immunizations on the following schedule: (1) Against pertussis (Sauer's vaccine) at 6 months; against diphtheria at 8 months; against smallpox at one year; against scarlet fever before the age of 4 years; against typhoid fever in the presence of a threatened epidemic, and in *all* of the "trailer" population.—F. C. RODDA, M.D., in *Minn. Med.*, Feb., 1938.

Orange Juice in Peptic Ulcer

• Ulcer diets are often deficient in Vitamin C, as shown by Alvarez. Orange juice may be added to the ulcer diet, as clinical observations indicate that it does not increase gastric acidity. Orange juice is considerably less acid than is even normal gastric juice.—C. DIMMLER, A.B., and M. H. POWER, Ph.D., in *Am. J. Dig. Dis. & Nutr.*, April, 1938.

Preventing Serum Reactions

• The fear of a possible serum reaction should never prevent the administration of serum to any patient who requires it. Severe serum reactions are very rare, and proper precautions will prevent them. These are: the intradermal injection of 0.1 cc. of serum to test for sensitivity; if present, the giving of small, gradually increasing doses; questioning as to allergic diseases; and the administration of serum which has been prepared from some other animal than the horse, where this is obtainable.—LOUIS TUFT, M.D., in *"Clinical Allergy"* (W. B. Saunders Co.).

Prevention of Wound Disruption and Adhesions

• Incomplete union of the peritoneum following inadequate closure results in postoperative adhesion to the abdominal scar, postoperative incisional hernia, and postoperative evisceration. The most common fault is to suture the peritoneum when the patient is straining. Sutures put in under tension cut through the peritoneum, thus leaving room for an entering wedge of omentum or bowel.—I. KROSS, M.D., in *Am. J. Surg.*, Sept., 1938.

(Harold Bellin, of Albany, New York, in the same issue of this journal, suggests that tension sutures be left in place for a considerable time—certainly longer than the common 7 days—ED.)

Prontosil and Sulfanilamide in Gas Gangrene

• In treating gas gangrene, it has been our custom to use mixed anti-tetanus serum in all cases, amputating in some; in others opening the wound wide and treating with wet dressings of Dakin's solution. Recently, we have begun to use Prontosil, 20 cc., every four hours for six doses, and sulfanilamide, 20 grains (1.325 Gm.), every four hours for two days. Apparently the infection is arrested much earlier and the patients begin to improve.—G. W. FULLER, M.D., and J. M. KELLUM, M.D., in *South. Surg.*, Aug., 1938.

Feeding of Infants

• It is very easy to bring the caloric value of artificial formulas too low without realizing it. Such a baby will not gain weight. The most common error is too great dilution of the milk. A baby weighing six pounds may be able to take a formula of two parts of milk to one part of water. When breast-fed children fail to thrive, the cause is often too little milk. This may be determined by adding further feeding.—LESLIE COLE, M.D., in *Br. M. J.*, Jan. 22, 1938.

THE DOCTOR'S STUDY

No one knows to what extent the times make books or books make the times. But this much is certain, that what we read affects our minds and our morale.—ROBERT QUILLEN.

New Books

Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE AND SURGERY, Waukegan, Ill., is accompanied by a check for the published price of the book.

Practical Otology

LEVINE

PRACTICAL OTOLOGY. *By* MORRIS LEVINE, M.D., F.I.C.S., *Clinical Professor of Otolaryngology, New York Post-Graduate Medical School, Columbia University; Attending Otolaryngologist, New York Post-Graduate Hospital, New York City. 2nd Ed., Rev. Philadelphia: Lea and Febiger. 1938. Price, $5.50.*

DR. LEVINE writes in a practical vein. Diagnosis and treatment are constantly emphasized, possibly because the basis of the book is his series of lectures to graduate students.

In chronic eczema of the external ear, with its pruritus and dry, scaling eruption, he recommends simple local treatment and investigation of the patient's general health and diet, inasmuch as general therapy and tonics are often necessary before healing will be satisfactory. In babies, eczema may often be allergic in nature (mother's milk or protein in the diet). A similar examination should be carried out if furuncles occur in the external auditory meatus.

Throughout the book, the physician will find hundreds of practical pointers, such as removing wax and foreign bodies from the external canal, the use of an inflatable head rest after mastoid operations, the use of thyroid extract in the treatment of deafness in myxedematous patients, the diagnosis of lateral sinus disease (with illustrations of wrong diagnoses), and a whole chapter on general therapeutic measures in otology.

Many of us have forgotten the use of the hot-water douche as a means of relieving pain and inflammation in acute middle-ear conditions, and vapor inhalations in the treatment of catarrhal conditions of rhinopharyngeal origin.

The author is convinced of the value of mild suction in the treatment of acute and chronic suppurative middle-ear conditions, and entrusts to the mother the use of a soft ear bulb, which is compressed, placed in the ear as far as possible, and allowed to expand. For office work, he employs an electric pump to furnish a *moderate* degree of suction.

This book can be warmly recommended to the general practitioner and to the otolaryngologist. The former will find valuable information for conditions he can treat; the latter will study with profit the step-by-step illustrations of operative procedures and detailed diagnostic methods.

Fractures and Dislocations

WILSON

EXPERIENCES IN THE MANAGEMENT OF FRACTURES AND DISLOCATIONS. *By the Fracture Service Staff of Massachusetts General Hospital, Boston, Massachusetts, under the Editorship of P. D. Wilson, M.D., Surgeon-in-Chief, Hospital for Ruptured and Crippled, New York; Clinical Professor of Orthopedic Surgery, College of Physicians and Surgeons, Columbia University; Formerly Associate Chief, Fracture Service, Massachusetts General Hospital; Collaborators, Arthur Allen, Franklin Balch, Joseph Barr, Edwin Cave, Ernest Doland, Torr Harmer, John Hodgson, Stephen Jones, V. H. Kazanjian, George Leland, Henry Marble, Langdon Parsons, A. W. Reggio, Sumner Roberts, Horatio Rogers, William Rogers, Charles Scudder, M. N. Smith-Petersen, Horace Sowles, Grantley Taylor, George Van Gorder and Edward Young, Jr. 1,410 Illustrations. Philadelphia and London: J. B. Lippincott Company. 1938. Price $15.00.*

THIS massive tome on a subject of such general interest to the medical profession has been eagerly awaited. It contains many innovations: Fractures and dislocations of each bone are considered together (rather than in their usual artificially separated position); results of treatment are considered and graded on the basis of anatomic results and functional and economic end-results; and hundreds of abbre-

viated case histories are given, with tracings of the roentgenograms.

These brief case histories are a feature that is well worth while. A few words describe the etiologic factor, the roentgenogram, other injuries, treatment, complications, and end-results. Thus the physician can compare various methods of treatment in regard to his individual patient. It is to be regretted that more details were not given in certain of these histories, as clarity is sacrificed for brevity. In mentioning a case of fractured tarsal scaphoid, this statement is made, "Complaint of pain on certain movements of the foot." If it is remembered that lateral motion of the foot takes place only at the subastragaloid joint, it would be clear that the pain would be elicited by lateral movements.

From the standpoint of the physician in general practice, this volume would be more valuable if emphasis were placed on the fractures that do not require hospitalization or open reduction. As accurate records could not be kept of out-patients, most of the tabulations and follow-up material is derived from analysis of hospital patients.

The acid test of a surgical text is its usefulness in practice. Your reviewer was treating two, both-bone fractures of the forearm at the time this book came for review. On looking up the section on closed reduction of forearm fractures, only one brief paragraph was found, which gave no details of technic of any kind; then two pages on the use of skeletal traction and open reduction.

Despite these small drawbacks, the book is tremendously useful, because it is frank in admission of failures and partial failures; because a number of men have written on the fracture of particular interest to them; and because of the up-to-dateness of the discussions. Certain fractures cannot be well treated unless open operation is undertaken as soon as closed reduction fails, as this book emphasizes.

The industrial and general surgeon will find much valuable material. With the addition of the usual textbook type of didactic instruction, the general practitioner could find nothing better.

Pathologic Technic

MALLORY

PATHOLOGICAL TECHNIQUE. A Practical Manual for Workers in Pathological Histology. *By* FRANK BURR MALLORY, A.M., M.D., S.D., *Consulting Pathologist to the Boston City Hospital, Boston, Massachusetts. 433 Pages, 14 Illustrations. Philadelphia and London: W. B. Saunders Company. 1938. Price, $4.50.*

THIS manual presents a careful discussion of every step in pathologic procedures that are used by research and clinical pathologists and their technicians. Solutions and maneuvers for carrying out difficult technics are described clearly and briefly.

The most interesting section to the physician in general practice is the chapter on autopsy methods, which occupies the final 100 pages. The inexperienced physician will learn much by reading these directions. He will find that he is able to perform a more satisfactory, systematic necropsy by using the many hints here given. For example, the abdominal contents may be viewed more easily if the recti muscles are cut just above the pubis (taking care not to injure the skin), as the abdominal flaps are thereby rendered much less tense.

The four customary autopsy technics are described in detail, so that one may adopt the method which will enable one to see most (Virchow's, Ghon's, block dissection, Rokitansky's). The chapter on postmortem examination of newborn children is valuable for the instructions given on examination of brain and spinal cord.

Surgery for Nurses

WELLS

A MANUAL OF SURGERY FOR NURSES. *By* CHARLES WELLS, M.B., F.R.C.S., *Honorary Surgeon with Charge of Out-Patients, Royal Southern Unit of the Royal Liverpool United Hospital; Visiting Surgeon, Cheshire County Council General Hospital; Consulting Surgeon, Liverpool Women's Hospital; Consulting Urologist, Waterloo General Hospital; Lecturer in Practical Surgery, University of Liverpool, etc. Baltimore: William Wood and Company. 1938. Price, $4.00.*

THE writing of a text for nurses is beset with difficulties for the physician or surgeon. It must be brief enough so that it can be readily covered by the student during her comparatively short training period, and yet comprehensive enough to give her an idea of the various types of situations and patients she will find herself matched with.

This vest-pocket volume is illustrated with many clear line drawings of splints, fractures, operative positions, locations of various lesions, etc. Certain of the sketches, notably those illustrating the spread of infection up the arm and the location of the tonsillar ring in the pharynx, are very worth while.

It is to be regretted that emphasis has been given to the use of tourniquets in the control of sudden bleeding. It is well known that the average tourniquet is only tight enough to compress the veins, but not the arteries, so that arterial blood continues to be pumped into the part. Lay persons and nurses are often astounded at the apparent paradox of tourniquet removal which *stops* bleeding from a part. Wells does rightly emphasize that the application of a tourniquet for any prolonged period may result in gangrene. The use of simple pressure over the bleeding points, with sterile gauze or a clean handkerchief, is quicker and usually more effective.

One of the pests of practice is the nurse who thinks that she can diagnose pathologic conditions. Brief books tend to make her think that the diagnosis of certain diseases is absurdly simple. For example,

"carcinoma of the left colon is manifested by increasing attacks of constipation and diarrhea." One of the symptoms of hemorrhoids is bleeding, yet the fact that carcinoma of the rectum is a much more serious cause of bleeding is not mentioned.

The instructions for treatment are simple and clear. It is to be hoped that there are more of the fine cuts in the next edition.

Gastro-intestinal Disorders

FRIEDENWALD, MORRISON AND MORRISON

CLINICS ON SECONDARY GASTRO-INTESTINAL DISORDERS. Reciprocal Relationships. *By* JULIUS FRIEDENWALD, M.D., *Professor of Gastro-Enterology (Emeritus), University of Maryland, School of Medicine; T. H. Morrison, M.D., Clinical Professor of Gastro-Enterology, University of Maryland, School of Medicine, and Samuel Morrison, M.D., Assistant Professor of Gastro-Enterology, University of Maryland, School of Medicine. Baltimore: William Wood and Co. 1938. Price, $3.00.*

"INDIGESTION" and "dyspepsia" are terms that serve to conceal ignorance or carelessness in making a complete examination and diagnosis of patients who complain of gastro-intestinal symptoms. It is easy to give alkaline powders and to forget that four out of five such patients have disease elsewhere than in the stomach or intestine.

This slender, interesting book is the only text in English on gastro-intestinal disorders which are secondary to disease elsewhere in the body. Case histories are given and discussions presented on the effect of cardiac affections, pulmonary tuberculosis, liver and gallbladder disease, intestinal disease, focal infection, genito-urinary disease, female pelvic organ disease, the menopause, endocrine dysfunction, syphilis, hematopoietic and deficiency disturbances, nervous affections, skin diseases, eye diseases, and food allergy, on stomach function.

The general practitioner who reads this volume now and again will be spared the embarrassment of having his dyspeptic patients cured by thyroidectomy, rest, and digitalis, or by treatment for tuberculosis. The diagnostician, too, will be benefited by the reminder that, "the stomach is the sounding-board of disease."

A B C of Vitamins

GREGORY

A B C OF THE VITAMINS. A Survey in Charts. *By* JENNIE GREGORY, M.S. *Foreword by Walter H. Eddy, Professor of Physiological Chemistry, Teachers College, Columbia University, New York City. Baltimore: The Williams & Wilkins Company. 1938. Price, $3.00.*

DO your patients ask you questions about the vitamins and their effects? Do you wish that you had time to read and understand the newer work that has been carried out on vitamin and calcium metabolism? Do you know what effect vitamin E has on sterility and what the effect is of large doses?

The busy physician who asks himself these questions will enjoy this large, illustrated book. Instead of reading pages of dry literature, he will find the facts on vitamins illustrated by charts and pictures, so that the important points may be grasped in a moment, and easily displayed to patients.

The book will do much to enable physicians to furnish scientific information, in place of the flood of unscrupulous advertising and "popular" articles, written by ill-informed laymen, which have formed the chief sources of knowledge available to the general public.

Words to the Wise

HALL

WORDS TO THE WISE. A Practical Guide to the Occult Sciences. *By* MANLY P. HALL. *First Edition. Los Angeles, Calif.: Philosophical Research Society Press. 1936. Price, $2.00.*

HERE is a book on occultism, so simply and directly written that any person of ordinary education and intelligence can understand every word of it. Every person who contemplates undertaking the serious study and practice of metaphyssics (and many who consider themselves rather well advanced in such studies) will profit greatly by a thorough and repeated study of it.

Mr. Hall is one of the most erudite students of occultism now living, and in this field speaks with the authority of knowledge. He demonstrates, in these pages, that the development of wisdom and the achievement of "illumination" are no light undertakings, but require several lifetimes, at least. The acquirement of the rudiments of knowledge necessary to make a sound *beginning* in this field calls for a minimum of five years of sincere and well-directed study. Such a course of study, with a list of the most satisfactory textbooks, is presented, and the practical rules for progress along this path are stated and described in detail.

A few characteristic quotations will give an idea of the author's literary and philosophic style:

"We are shrewd enough in our economic dealings, but warped out of all semblance to normality in our aspirations."

"Faith is a beautiful thing. But a man who believes everything he hears in this world is more apt to wind up in a psychopathic ward than in Nirvana."

"Each man and the God within him constitute a majority."

"There are no vicarious atonements nor exceptions in creation. Law is final, absolute, and immutable."

"It is always good for the young student to remember that, while the world and other people appear to be going to the dogs, this universe and all that it contains are really 'going to heaven' as rapidly as they can."

"To think is to wonder. To wonder is to discover. To discover is to know. And to know is to be a philosopher .... Philosophy

is not only the science of living, but also the joy of living."

"First put your life in order, and the foundation of right living will give you the discrimination to choose your beliefs honestly and intelligently."

This remarkable book is scarcely half as long as the average novel, but it cannot be read so quickly, because the intelligent reader simply *has* to stop and think on almost every page, and for that reason it is not fulsome praise to say that anyone who will read it, seriously and openmindedly, from cover to cover, is bound to be wiser than he was before.

Gynecology

CURTIS

A TEXTBOOK OF GYNECOLOGY. *By* ARTHUR HALE CURTIS, M.D., *Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University School of Medicine; Chief of Gynecological Service, Passavant Memorial Hospital, Chicago, Illinois. Third Edition. Reset. 603 Pages; 318 Illustrations. Philadelphia and London: W. B. Saunders Company. 1938. Price, $7.00.*

THOSE who are fortunate to have a copy of each succeeding edition of this authoritative text can trace the growth of the material from a small, highly individualized work to a comprehensive reference book of 573 pages. The present edition has been rendered valuable by the addition of 78 pages on gynecologic anatomy and physiology. Careful dissections and clinical examinations were used as the basis of this section. Tom Jones contributed his usual excellent illustrations.

The section on endocrinology has been revised and brought up to date. Gynecologic anatomy, pathology, and surgical steps are beautifully illustrated, some in life-like colors. The study of these pictures brings many facts to mind and makes their retention easier.

One wishes that more surgeons employed Curtis' plan of using rubber sheeting or small packs of heavy rubber, supported by wet packs, to keep intestines out of the field, instead of the adhesion-producing wet or dry gauze packs. He feels that clamps should not be lifted as the tie is being made in pelvic surgery, as it predisposes to hemorrhage from retraction of blood vessels and is a factor in inducing embolism. One cannot fully agree with his statement, "One may dispense with tension sutures in most cases."

New Books Received

The following books have been received in this office and will be reviewed in our pages as rapidly as possible.

PLASTIC SURGERY. *By Arthur Joseph Barsky, M.D., D.D.S. Philadelphia and London: W. B. Saunders Company. 1938. Price, $5.75.*

DR. COLWELL'S DAILY LOG FOR PHYSICIANS FOR 1939. A Brief, Simple, Accurate Financial Record for the Physician's Desk. *Champaign, Illinois: The Colwell Publishing Company. 1938. Price, $6.00.*

BIOGRAPHY OF THE UNBORN. *By Margaret Shea Gilbert. Baltimore: The Williams & Wilkins Company. 1938. Price, $1.75.*

HUMAN PATHOLOGY. A Textbook. *By Howard T. Karsner, M.D. 5th Edition, Revised. With an Introduction by Simon Flexner, M.D. Philadelphia and London: J. B. Lippincott Company. 1938. Price, $10.00.*

APPLIED PHYSIOLOGY OF EXERCISE. *By Ferd John Lipovetz. Minneapolis, Minnesota: Burgess Publishing Company. 1938. Price, $3.25.*

INTERNAL MEDICINE. Its Theory and Practice. In Contributions by American Authors. *Edited by John H. Musser, B.S., M.D., F.A.C.P., 3rd Edition, Thoroughly Revised. Philadelphia: Lea & Febiger. 1938. Price, $10.00.*

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS. *By George W. Norris, A.B., M.D.; and H. R. M. Landis, A.M., M.D., Sc.D. 6th Edition, Revised. Philadelphia and London: W. B. Saunders Company. 1938. Price, $10.00.*

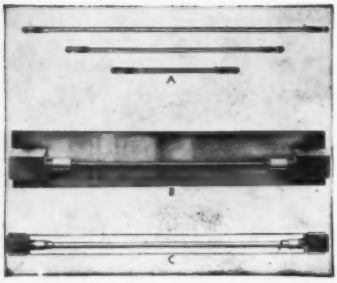
THE PNEUMONIAS. *By Hobart A. Reimann, M.D. With a Foreword by Rufus Cole. Philadelphia and London: W. B. Saunders Company. 1938. Price, $5.50.*

COMMON HAPPENINGS IN CHILDHOOD. *By Sir G. Frederic Still, K.C.V.O., M.A., M.D. (Cantab.), Hon. LL.D. (Edinb.), F.R.C.P. (Lond.). New York: Oxford University Press. 1938. Price, $1.75.*

LIFE—BLOOD. *By Bert Tru, Physician and Surgeon. Boston, Massachusetts: The Christopher Publishing House. 1938.*

UROLOGY. *By Daniel N. Eisendrath, M.D.; and Harry C. Rolnick, M.D. 4th Edition, Entirely Revised and Reset. Philadelphia and London: J. B. Lippincott Company. 1938. Price, $10.00.*

Medical News



Courtesy of Westinghouse Electric & Mfg. Co.

Rentschlerization

UST AS PASTEURIZATION is known as a means of partial or complete sterilization by the use of heat, so the Rentschler-James process, or "Rentschlerization," is known as a means of sterilizing through the use of selected ultraviolet radiations produced by Sterilamps, which were designed by Westinghouse.

Over 80 percent of the radiant energy produced by the Sterilamp is in the region of 2550 Angstroms, which provides the most effective bactericidal energy for the power consumed.

This method and apparatus are particularly satisfactory for sterilizing drinking glasses at soda fountains and restaurants, as these utensils are found to be heavily contaminated and are not easily sterilized by other methods.

Studies on Cytology

IN HONOR of the centenary of the discovery of the cellular theory by Schleiden and Schwann, the Mexican Society of Natural History offers a prize for the best paper on some phase of cytology with a direct bearing on the Cellular Theory, written in English, German, French, Portugese, Italian, or Spanish, and submitted by registered mail before Jan. 31, 1939. For complete information, write to Sociedad Mexicana de Historia Natural, Apartado Postal 1079, Mexico, D. F., Mexico.

Southern Medical Association

THE SOUTHERN MEDICAL ASSOCIATION will hold its annual meeting this year at Oklahoma City, Okla., November 15 to 18, inclusive. These meetings are always instructive and delightful, and non-members are given a cordial Southern welcome. For further particulars write to Mr. C. P. Loranz, Empire Bldg., Birmingham, Ala.

Training Course in Birth Control

THE FIRST INSTITUTE for the training of professional workers in birth control was held September 13, 14, and 15, 1938, at the headquarters of the American Birth Control League, in New York City. Workers from New York State, Pennsylvania, and Rhode Island attended, and a pattern was set for later similar Institutes, on a larger scale. The birth control movement now seems to have come of age, in reaching the stage of analysis and self-discipline, and further progress should be more swift and certain.

A New Analgesic

A NEW SUCCEDANEUM FOR MORPHINE was recently announced by Dr. Chauncey D. Leake, professor of pharmacology at the University of California. Chemically it is dinitrophenylmorphine (called, so far, "DNPM," for short). It is said to have none of the action of dinitrophenol, and to possess pain-relieving properties between those of codeine and morphine. It bids fair to be less habit-forming than the latter drug.

Quadruple "Iron Lung"

A SUCTION-PRESSURE APPARATUS for maintaining respiration (known as the "iron lung"), capable of handling four patients at once, and thus reducing the cost per patient, has been installed at the Children's Hospital, in Boston.

SEND FOR THIS LITERATURE

To Assist You in Obtaining New and Worthwhile Catalogs, Booklets, Reprints, etc., "C. M. & S." will forward your requests for any literature listed in this Department.

Make Use of this Department
Both Literature and Service Are Free

1 The Pneumonic Lung. Its Physical Signs and Pathology. Denver Chemical Mfg. Co.

4 Taurocol. The Paul Plessner Co.

5 Specific Urethritis—Gonosan "Riedel." Riedel & Co., Inc.

6 Dr. Weirick's Sanitarium. Dr. G. A. Weirick.

9 Elixir Bromaurate in the Treatment of Whooping Cough and other Persistent Coughs. Report of Cases. (Booklet.) Gold Pharmacal Co.

11 Chondroitin; for Treatment of Idiopathic Headache. The Wilson Labs.

15 Cough—Its Symptomatic Treatment. Martin H. Smith Co.

17 Feeding Diabetic Patients. Knox Gelatine Labs.

19 Menstrual Regulation by Symptomatic Treatment. Martin H. Smith Co.

20 Hyperol. A Utero-Ovarian Tonic and Corrective. Purdue Frederick Co.

21 Gray's Glycerine Tonic Comp. Purdue Frederick Co.

22 Feeding Sick Patients. Knox Gelatine Labs.

25 Clinical Guide for Female Sex Hormone Therapy. Schering Corp.

27 Reducing Diets and Recipes. Knox Gelatine Laboratories.

31 Laboratory Tests to Determine the Germicidal Efficiency of the Vapors from the Cresols of Coal Tar. Vapo-Cresolene Co.

33 Foot Weakness and Correction for the Physician. The Scholl Mfg. Co., Inc.

38 Protecting the Expectant Mother. Corn Products Sales Co.

41 Oreton—Male Sex Hormone. Schering Corp.

43 Karo Syrup for Infant Feeding. Corn Products Sales Co.

44 Appliances for the Mechanical Retention of Hernia. Brooks Appliance Co.

46 Vitafer. A Reconstructive Tonic containing Antianemic Factors with Vitamin B. The National Drug Co.

50 Gestasol. The Follicular and Luteinizing Fractions obtained from Human Placentas. The National Drug Co.

51 Formaldehyde for Urinary Antisepsis. Schering & Glatz, Inc.

54 Use of Zinc Borate in Otolaryngology. Hille Laboratories.

78 Argyrol in Urology and Gynecology. A. C. Barnes Company.

79 Hydrocyanate of Iron—Pharmacologically Correct in the Treatment of Epilepsy. The Tilden Co.

83 Iocapral. An Arterial Antispasmodic. Winthrop Chemical Co., Inc.

89 Free Iodine as a Therapeutic Agent. Burnham Soluble Iodine Co.

91 Adrenal Cortex; for the Treatment of Addison's Disease and Asthenia. The Wilson Labs.

95 Low Cholesterol, Low Fat, Low Caloric Diet List for Distribution to Patients. Burnham Soluble Iodine Co.

96 Eburol, a Healing Ointment for Burns, Wounds and Ulcers. Ernst Bischoff Co.

99 A Survey in Two Fields of Medicine. A. C. Barnes Co.

100 Neo-Plasmoid. The Modern Solution For the Injection Treatment of Hernia. Farnsworth Labs.

105 Ovoferrin. Iron in its Most Efficient Subdivision. A. C. Barnes Co.

110 Parenteral Calcium Therapy—A Review of the Literature with Comprehensive Bibliography. Loeser Laboratory, Inc.

111 Argyrol in Ophthalmology. A. C. Barnes Company.

112 Oxygen-Ozone and Octozone. Octozone Equipment Co.

116 Alparene—An Effective Sclerosing Solution for the Injection Treatment of Hernia. Dequin Physicians' Products Co.

123 Resumé of Venereal Therapy. Mallinckrodt Chemical Works.

124 Soricin in the Treatment of Intestinal Toxemia. The Wm. S. Merrell Company.

126 Subenon—Anti-arthritic and Anti-rheumatic. Seydel Chemical Co.

130 Allantoin Ointment 2% in Slow and Non-healing Wounds and in Burns. The National Drug Co.

135 Argyrol in Otorhinolaryngology. A. C. Barnes Co.

137 Barium Sulfate. Resumé of Use in Alimentary Roentgenology. Mallinckrodt Chemical Works.

139 Standardization of Estrogenic Hormone. Reed & Carnrick.

140 Paramon—Analgesic. Seydel Chemical Co.

142 Anabolin. A Detoxicative Hormone from the Liver. The Harrower Laboratory, Inc.

143 The Physicians' Conquest of Syphilis. The Tilden Co.

144 The Vicious Circle. Schering & Glatz, Inc.

145 ZymenoL—to Aid Normal Evacuation Without Irritant Drugs or Bulk-producing Agents in Both Constipation and Colitis. Otis E. Glidden & Co., Inc.

146 Moru-Quin for Injection Treatment of Varicose Veins. The National Drug Co.

148 Ampoule Products for Subcutaneous, Intramuscular, and Intravenous Medication. Associated Physicians Labs.

150 Constipation and Hemorrhoids. Wm. R. Warner & Co.

151 Cofron Liver Concentrate. Abbott Laboratories.

152 Avoiding the Water Hazard. Wm. R. Warner & Co.

153 Haliver Oil with Viosterol. Abbott Labs.

154 Cyclopropane for Anesthesia. Mallinckrodt Chemical Works.

USE THIS COUPON! 11-38

Enter below the numbers of the literature you desire (on both sides of this page); check your profession in the proper square, inclosing your card, prescription blank, or letterhead as verification; tear off and mail to CLINICAL MEDICINE AND SURGERY, Medical & Dental Arts Bldg., Waukegan, Ill.

We will do the rest!

NOS......

.....

NAME.....

ADDRESS.....

☐ Physician (M.D.) ☐ Intern ☐ Medical Student ☐ Nurse
☐ Registered Pharmacist ☐ Dentist ☐ Osteopath